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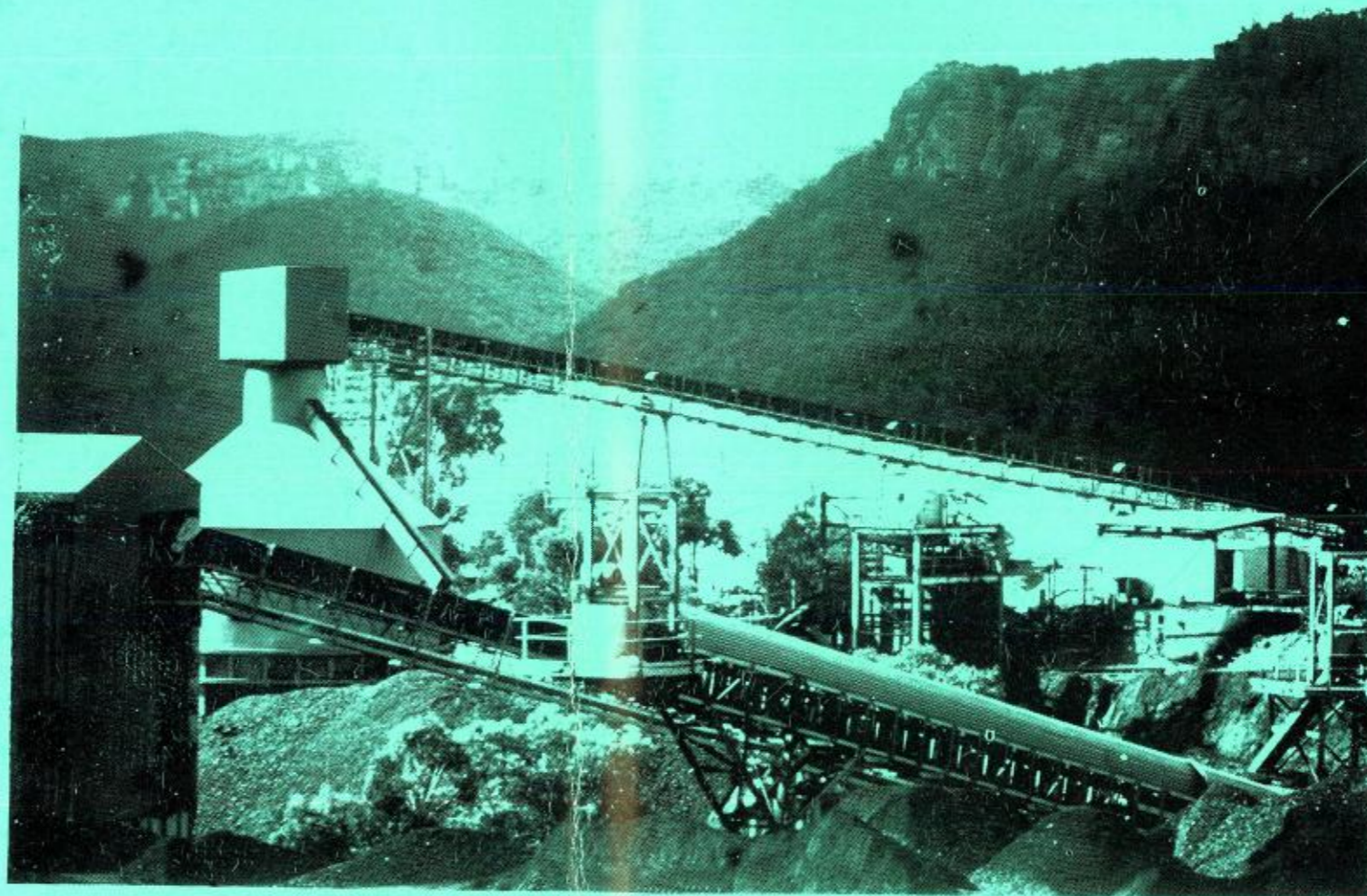
City of Greater Lithgow rural environmental study : final report



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Julie

CITY OF GREATER LITHGOW RURAL ENVIRONMENTAL STUDY



CITY OF GREATER LITHGOW
RURAL ENVIRONMENTAL STUDY

FINAL REPORT

Prepared for
DEPARTMENT OF ENVIRONMENT AND PLANNING
and
GREATER LITHGOW CITY COUNCIL

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1. INTRODUCTION

An historical perspective on the economic growth of Lithgow has been maintained throughout the Study to remember the mixed fortunes that are often associated with towns based on mining and resource development.

The coal mining industry and its associated power generation projects continue to be the principal determinants of economic and social conditions in Greater Lithgow. At the same time these activities have the potential in the short to medium term future of conflicting with the high environmental values of large areas.

This is the background to the planning issues of this Study which concern the determination of an effective strategy for compatible and productive land use activity. One particular aspect of the Study has been the issue concerning accommodation requirements for an increased population brought to the area with the resurgence of important coal mining and power generation activity in the last seven years.

The challenge of this Local Environmental Study for the rural areas of Greater Lithgow will be to facilitate the growth of resource development projects and accommodate the increased population while maintaining the rich environmental and agricultural quality of the area.

2. STUDY PROCESSES

The original resolution to carry out a Local Environmental Study for rural areas of the Greater Lithgow City Council was passed by Council on 10 August 1981 (pursuant to Section 54 and Section 57 of the Environmental Planning and Assessment Act 1979). This intention was formally gazetted on 27 November 1981 setting out specifications relating to form, content of an Environmental Study of Certain Land within the City of Greater Lithgow to which a Draft Local Environmental Plan is Intended to Apply. The aims of the Study were to:

- (a) define environmental protection and heritage conservation issues;
- (b) identify recreation resources, their attributes and accessibility for public use;
- (c) maintain amenity for the existing community, provide for projected population growth and identify and safeguard future planning options;
- (d) identify agriculturally productive land and other important natural resources and determine what can be done to conserve them;
- (e) identify the overall impact on the environment of major resource development projects.

The present study has been jointly funded by the Department of Environment and Planning and the Greater Lithgow City Council. The Study is under the control of a Steering Committee, comprising officers of the Department of Environment and Planning and the Greater Lithgow City Council. The Department has sought the involvement of all other agencies with an interest in the area.

An Interim Report was submitted to the Steering Committee in April 1982 and instructions were received. Subsequent to this a special meeting was arranged with the Steering Committee on 28 October 1982 to discuss the rural planning options and this final report reflects the discussion and decisions of that meeting.

Since the Interim Report, extra information has been received from the National Parks and Wildlife Service, the Department of Agriculture, the Department of Leisure Recreation and Tourism, and the Valuer-General. New information from both the Joint Coal Board and the Electricity Commission has been elicited to clarify current predictions on power generation and coal mining prospects.

3. ENVIRONMENTAL CONSIDERATIONS

3.1 Introduction

The aim of this Section is to investigate the environmental significance of the rural areas within the City of Greater Lithgow.

A full description of all the physiographic attributes of the Study Area is considered outside the parameters of this work and only those regarded as having conservation value of relevance to this study are explored and defined. Where appropriate, reference has been made to more detailed previous works. Of particular importance to this Section is the work recently undertaken by Rodger Bartlett, Landscape Architect in the Research Section of the Department of Environment and Planning. The report on the Landscape Analysis and Vegetation Conservation Value of the City of Greater Lithgow is available at the Department of Environment and Planning. It should be noted that these assessments were carried out for those areas outside the National Park boundaries.

This Section examines those natural systems concerned with land capability, water catchment, natural vegetation, landscape value and items of cultural importance including heritage items and aboriginal sites.

3.2 Land Capability Assessment

The two methods for assessing land capability are the erodability assessment as employed by the Soil Conservation Service and the productivity assessment as used by the Department of Agriculture. This Section discusses the findings of the Soil Conservation Service. For productivity refer to Section 4.1 Agriculture.

The Soil Conservation Service assessment, based on data for climate, geology, soils, landform, drainage pattern, current landuse and existing soil erosion, derives rural and urban capability classifications which are capable of supporting use without creating uncontrollable soil erosion.

The rural capability classification describes three classes of potential rural land use as :

- (i) suitable for regular cultivation,
- (ii) suitable for grazing,
- (iii) suitable for other purposes, including forestry, cliffs, lakes, swamps, mining and urban areas.

? ||

The Service has excluded National Parks, State Forests and Nature Reserves from its assessment.

mark ?

The City of Greater Lithgow is comprised of basically two landscape types - plateau and tableland. The plateau landform is predominantly to the east of the Study Area and continues to form the western sectors of the Wollemi and Blue Mountains National Parks with approximately one-third of the study area being within the Parks boundaries. The Western half of the study area is comprised of deeply dissected tableland which opens out to the farming and grazing area of the Western Plains.

The study area has generally poorer quality land in terms of erosion factors with virtually no areas suitable for regular cultivation and the only arable land being that adjoining the Capertee River in the vicinity of Glen Davis.

The area has fairly large sections suitable for grazing with part suitable for occasional cultivation and the remainder not suitable for any cultivation, but because of its location on the Lithgow coal seam, which is considered the most significant in the western coalfields, about 12% of the City of Greater Lithgow is being used for mining and mining leases. Exploration licences and mining leases extend generally north-west from the City of Lithgow.

The high erodability of the soil, the extensive modification of the area for mining activity and the fact that over 50% of the Greater Lithgow area is within National Parks, State Forests and Nature Reserves means that opportunities for pursuing viable agricultural landuses is extremely limited.

3.3 Water Catchment Areas

Water catchment areas identified by Rodger Bartlett in his landscape analysis of the City of Greater Lithgow include the east draining Wolgan, Coxs and Capertee Rivers and the west draining Turon and Fish Rivers, with the Great Dividing Range forming a watershed. It should be noted that the Newnes Plateau and Bungleboori Creek have been included in the Wolgan River catchment. Refer Map and Appendix.

Headwaters of all five catchments are located in the plateau areas of the Newnes, Ben Bullen and Sunny Corner State Forests. The Wolgan and Capertee River catchments drain into National Parks and afford high nature conservation value for wildlife habitats. As well, they provide high wilderness recreational qualities through the availability of potable water within a natural environment.

The Coxs River drains into the Warragamba Dam to support the Sydney Water Supply whilst the Fish River catchment supplies the Lithgow, Oberon and Blue Mountains areas. The water quality of both these catchments require obvious protection for health reasons.

The Turon, while not directly supporting nature conservation or water supply, is important within the concept of the Macquarie-Turon Parkway as enunciated by the Lands Department and, as such, its environmental quality should be protected.

For these reasons, the high nature conservation and cultural values of these critical catchment areas should be seen in a statewide perspective.

The headwater catchments are important for vegetation and wildlife habitats. Rodger Bartlett found that areas of vegetation stabilised the soil surface at the headwaters of each of the five major water catchments, with the Capertee and Wolgan River catchments having the most extensive areas of natural vegetation.

Although no information on present water quality or flow rates of water courses has been made available for this Study, it has been stated that water quality is extremely high.

The area is sensitive to developmental incursions, and conflicting interests and resources, e.g. coal mining, nature conservation, etc. may erode the quality of the upper catchment and consequently cause ecological disturbance through changing nutrient and hydrological patterns. This in turn would create management problems for downstream protection within National Parks.

It is clear that water quality and flow needs to be maintained and the natural areas surrounding the headwaters protected. Environmental safeguards should be required for developments within areas affecting the catchments if water quality and nature and cultural values are to be maintained.

3.4 Natural Vegetation

(Summary of findings from the report on vegetation assessment as prepared by Rodger Bartlett, landscape architect, Department of Environment and Planning.)

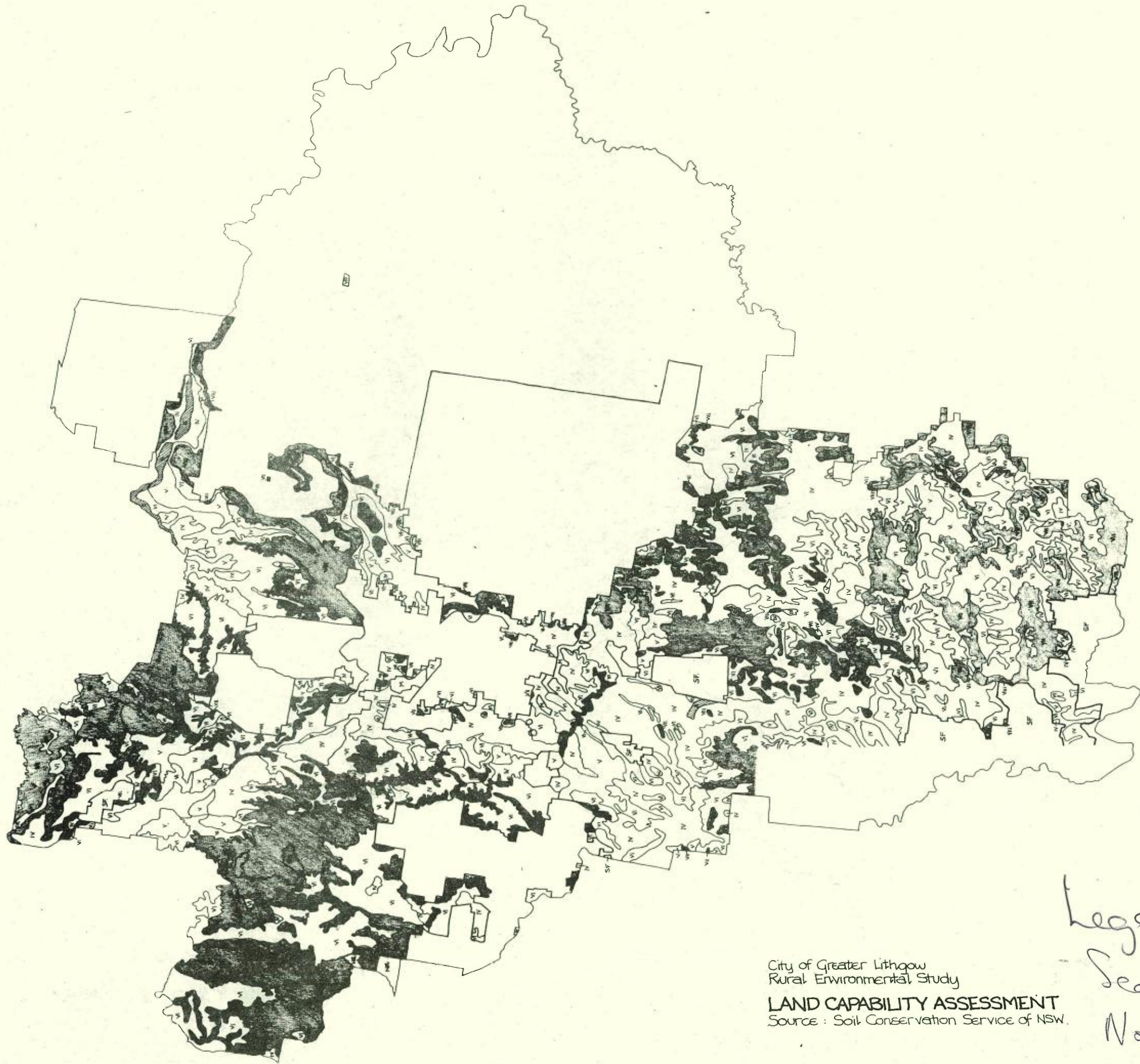
There are areas of vegetation stabilising the soil surface in mountainous terrain at the headwaters of each of the five major water catchments. The most extensive areas of this vegetation are within the Capertee and Wolgan River catchments.

Vegetation of "regional botanical value" includes: *Eucalyptus macrorhyncha* (Red Stringybark) *E. rosii*, (Scribblygum), *E. melliodora*, (Yellow Box), *E. blakelyi* (Blakely's Red Gum) and *E. albens* (White Box). Vegetation formations where these species are dominant have been heavily exploited in the past and are only moderately to reasonably reserved within Australia. G. R. Forster says of this vegetation, "the survival in the study area of an extensive area incorporating large samples of three different formations in a relatively undisturbed state (Class 2), between Brogan's Creek, Bogee and Ben Bullen makes it highly suitable for conservation. These formations require reserve replication, which can be achieved in one area, providing a range of vegetation communities and faunal habitats". These vegetation associations mainly occur within the upper catchment of the Capertee River.

"Wilderness and/or near natural areas affording high habitat value" are Class 1 areas from the Biological Conservation Capability map. This area has "vegetation in a state similar to that of the pre-European situation. Selective logging may have occurred. Exotic species are either absent or less than 5% of projective foliage cover". It is assumed that these least disturbed areas, buffered by surrounding vegetation from cleared areas, have the greatest value as a wildlife habitat. Areas of this category are mainly located within the Wollemi and Blue Mountains National Parks. Parts of the Newnes State Forest also occurs within an area of high habitat value.

"Near natural areas affording medium habitat value" are Class 2 areas from the Biological Conservation Capability Map. This class includes "vegetation lightly logged with marked absence of over-mature trees. High frequency of firs has modified the composition and structure of the understorey. Exotics comprise 5-10% of projective foliage cover". It is assumed that this area provides wildlife habitat of medium conservation value.

"Wilderness and/or near natural areas affording high habitat value" are Class 1 areas from the Biological Conservation Capability map. This area has "vegetation in a state similar to that of the pre-European situation. Selective logging may have occurred. Exotic species are either absent or less than 5% of projective foliage cover". It is assumed that these least disturbed areas, buffered by surrounding vegetation from cleared areas, have the greatest value as a wildlife habitat. Areas of this category are mainly located within the Wollemi and Blue Mountains National Parks. Parts of the Newnes State Forest also occurs within an area of high habitat value.



City of Greater Lithgow
Rural Environmental Study
LAND CAPABILITY ASSESSMENT
Source: Soil Conservation Service of NSW.

Legend ?
Scale ?
Northpoint ?



City of Greater Lithgow
Rural Environmental Study
RIVER CATCHMENT AREAS

3.5 Landscape Evaluation

(Summary of the landscape analysis as prepared by Rodger Bartlett, landscape architect, Department of Environment and Planning.)

LANDSCAPE CHARACTER TYPE

The geology of the area is comprised of two distinctly different formations: the sedimentary sandstones, shales and tuffs of the Triassic period overlaying metamorphic bed rock of the Devonian and Lower Carboniferous periods. Coal measures of the Permian period occur between these sedimentary and metamorphic formations.

The sedimentary deposits are greatly weathered and generally the boundary between the geological formations is distinguished by a sandstone escarpment or sandstone outcrops. The exception is the sedimentary hills in the vicinity of Ben Bullen State Forest in the upper catchment of the Coxs and Turon Rivers. Outcrops of sedimentary geology such as Pantoneys Crown and Genowlan Mountain occur within the metamorphic geology.

This geology is formed by north south bands of metamorphic rock in the Capertee Geanticline overlain by the more recent Carboniferous Bathurst Granite comprising adamellite, granite and granodiorite. The terrain of these tablelands becomes more rugged in the west and south of the study area.

The characteristics of landform, vegetation cover, water forms (drainage) and land use are sufficiently different between the two geological formations to define two distinct landscape types in the study area. These are identified as Plateau and Tablelands. The boundary between these landscape types is formed by the sandstone escarpment and outcrops of the Plateau. Sedimentary land forms occurring within the Tableland landscape are perceived as elements isolated from the Plateau landscape.

FINDINGS

The landscape of Greater Lithgow is one of considerable complexity and beauty. Its two landscape types interact to form enclosed valleys of varying scale and enclosure. The Plateau landscape is generally east of the Great Dividing Range while the Tablelands penetrate the Divide in the Capertee and Coxs River catchments.

(i) WOLGAN RIVER CATCHMENT

Within the Plateau landscape the Wolgan River has formed a "bottle neck valley" through the weathering of the sandstone strata. All of the escarpments and steep talus slopes that enclose this valley are distinctive landscape features.

The valley floor has been identified as of minimal visual quality. However the visual influence of the sandstone escarpments extends throughout the Wolgan Valley unit so that the whole of the Wolgan Valley is perceived as one landscape unit. Roland Breckwoldt has recommended to the National Trust of Australia (N.S.W.) in "The Wolgan Valley", 1977, that: "The Scenic qualities of the Wolgan Valley should be protected by designating it a scenic protection area. The boundary of the area should include the entire visual catchment".

The Newnes Plateau and Bungleboori Creek catchment also are situated within the Wolgan River Catchment.

Extensive rock outcrops are found as either exposed bedrock or on the edge of drainage lines. These features are of considerable interest and are sufficient to classify an area as having distinctive visual value.

Slopes of 25% or greater subtended from the plateau are classed as hilly terrain and of common visual value.

Variations in vegetation cover pattern are limited to pine plantations, cleared land and indigenous vegetation cover. It may be that the numerous hanging swamps contribute to the visual variety of the plateau landscape and should be given importance in the visual assessment.

(ii) COXS RIVER CATCHMENT

The Coxs River catchment contains both landscape types, the Plateau landscape forming a distinctive edge to partially enclosed valleys of the Tableland landscape type. The City of Lithgow is sited within such a valley with mountainous terrain to the north and hilly terrain to the south.

The Lett River Valley's escarpment is prominent in most elevated views within the Coxs River catchment, south of Lithgow. It is a pastoral, humanised landscape of such a scale as not to be oppressive or too open in its feeling of enclosure. To the west views extend from this valley to the ridges of the Great Dividing Range. Hartley is an historic site managed by the National Parks and

Wildlife Service and located within this valley. The same comments about the visual value of the valley floor of the Wolgan Valley apply to the Lett River valley floor.

Similar comments apply to the visual importance and distinctive qualities of the Blackheath Creek Valley below the Mount Victoria and Blackheath escarpment.

North of Lithgow the valleys in the western part of the catchment become smaller in scale.

Wallerawang is situated in the upper part of the catchment. The recently constructed dam contributes to the visual qualities of this town. The vegetation association of *E. fastigata* and *E. viminalis* in the vicinity of Wallerawang is around 20m in height and is a significant visual element in a landscape of relatively low relief. This vegetation occurs on the hills north of Pipers Creek.

As one proceeds south along the Great Dividing Range the terrain relief becomes greater and the views more extensive. Views from the Jenolan Caves Road situated on the ridge of the valley escarpment are particularly spectacular and memorable. Pine plantations become dominant elements in the landscape south of Hampton and have encroached onto prominent lands on Mount Bindo.

Extensive clearing of lands has taken place in the rugged terrain and on steep slopes in the lower catchment of the Coxs River. This has led to soil erosion problems as well as to scarring of ridgelines and prominent slopes.

(iii) CAPERTEE RIVER CATCHMENT

The Capertee River catchment drains east of the Great Dividing Range and contains both Tablelands and Plateau landscape types. Its Tableland landscape contains within it sedimentary outcrops of sedimentary geology known as: Pantoneys Crown, Mount Gundangaroo and Mount Airly. The variation in elevation extends from over 1,100m along parts of the southern escarpment to under 300m at Glen Davis. Panoramic views of this landscape may be obtained from the edge of the catchment at places such as Pearsons Lookout near Capertee. The outcrops and escarpments are distinctive visual elements in this catchment.

The upper parts of the Capertee River catchment are mainly treed. The Airly and Capertee State

Forests are within this tree cover. The Plateau landscape is entirely treed. Clearing has occurred on the plains and undulating terrain of the valley.

A sense of spatial enclosure from the valley escarpment is not experienced until one proceeds east past Mount Gundangaroo along the Capertee River plain. The main visual experience is one of visual openness and spaciousness except when penetrating the Plateau escarpments or within the Open Forest or Woodland tree canopy.

(iv) TURON RIVER CATCHMENT

This Turon River catchment drains westwards from the Great Dividing Range. It is a Tableland landscape except for a small portion of Plateau landscape near Ben Bullen State Forest. Its distinctive visual areas comprise: the Turon River corridor, mountainous terrain and rocky outcrops in the Ben Bullen State Forest associated with sedimentary geology.

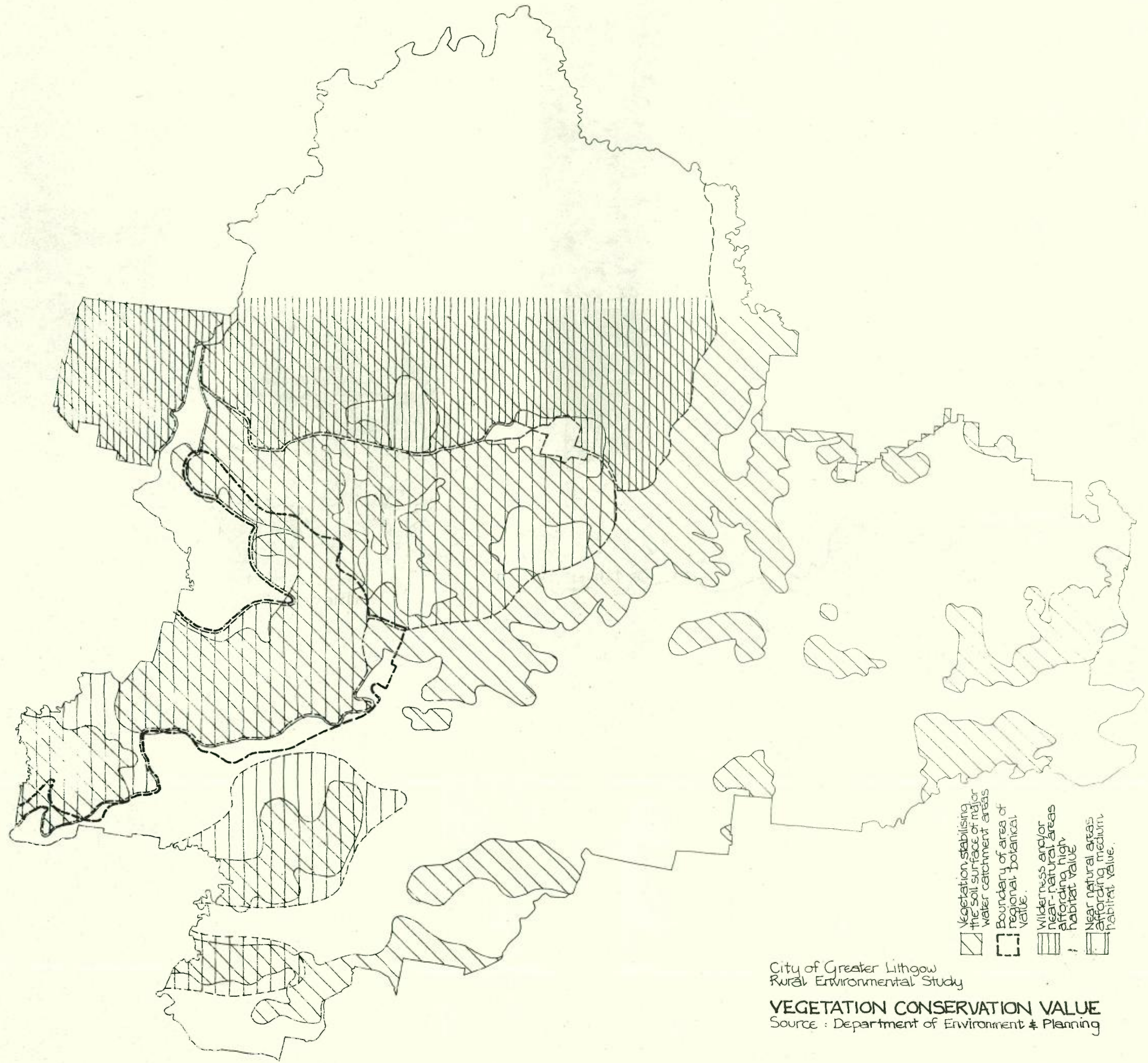
Extensive areas of indigenous vegetation cover the hilly and mountainous terrain. This includes both Open Forests and Woodlands of which the *F. fastigata* and *E. viminalis* association is notable for its diversity and average height of 20 metres. Clearing of land for grazing has occurred along Palmers Oakey Creek, Coolamigal Creek, Dulhunty and Round Swamp Creek sub-catchments. In parts this clearing has extended onto the steep slopes of mountainous terrain. Pine plantations have been established within the Sunny Corner State Forest.





Large areas of treed, hilly terrain are identified as being of common visual variety. It should be noted that these areas are visually important to the landscape setting of the township of Portland and as contracting elements to the undulating and rolling terrain of the cleared agricultural land. Stands of mature high trees in this agricultural landscape are as significant visually as cleared hilly terrain.

(v) FISH RIVER CATCHMENT

The Fish River catchment is wholly within the Tableland landscape and drains inland from the Great Divide.

Most of its terrain within the study area is hilly or mountainous. Its distinctive visual elements and its treed mountains and the Fish River visual corridor. The elevation of some mountains approach 1300 metres.

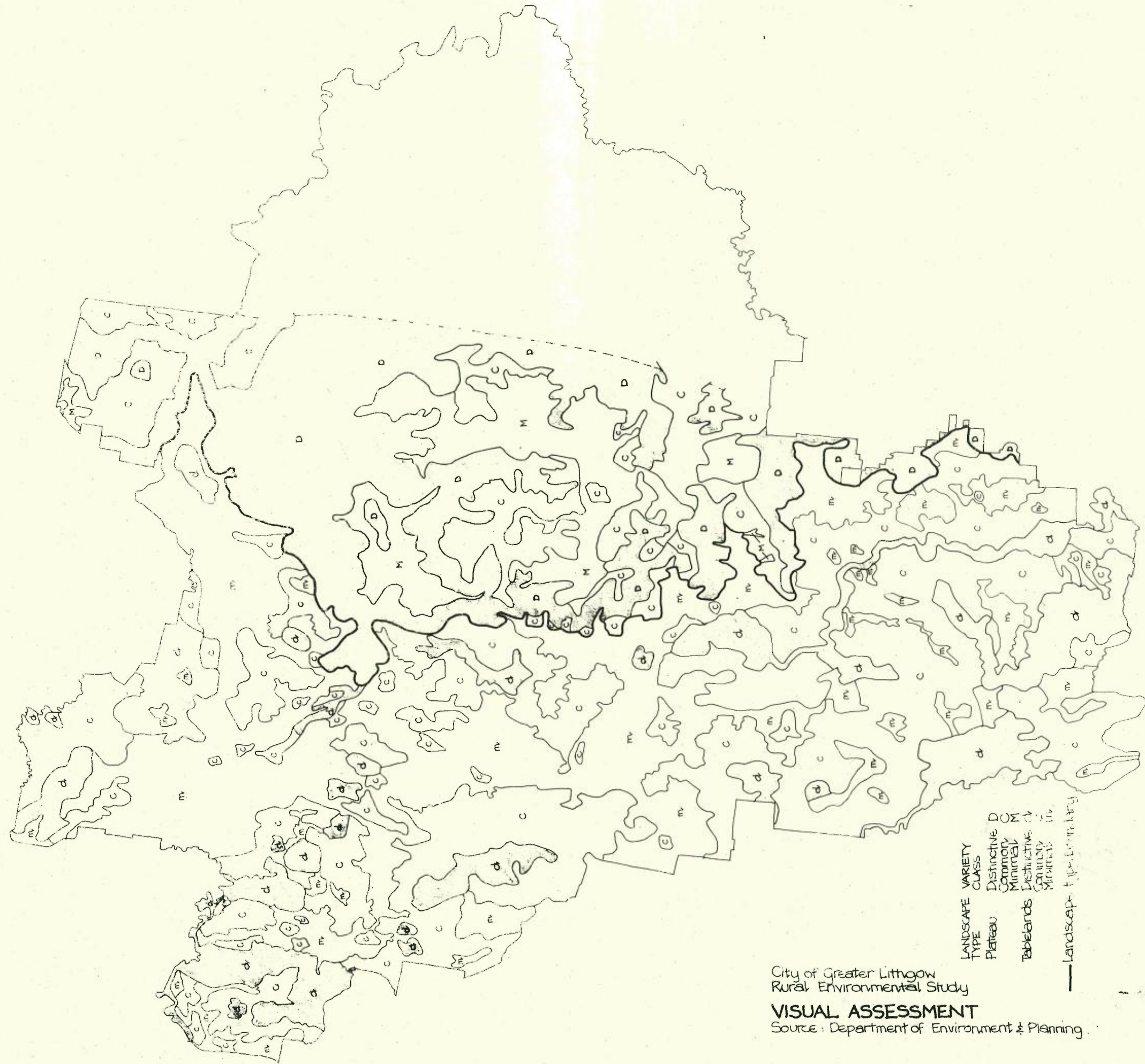


- 
 Vegetation stabilising the soil surface or major water catchment areas
- 
 Boundary of area of regional botanical value
- 
 Wilderness and/or near-natural areas affording high habitat value
- 
 Near natural areas affording medium habitat value

City of Greater Lithgow
Rural Environmental Study

VEGETATION CONSERVATION VALUE

Source : Department of Environment & Planning



LANDSCAPE TYPE
 Plateau
 Tablelands
 — Landscape boundary

VARIETY CLASS
 Distinctive D
 Commonly Occurring M
 Minimal X
 Distinctive Y
 Commonly Occurring Z
 Minimal

City of Greater Lithgow
 Rural Environmental Study
VISUAL ASSESSMENT
 Source: Department of Environment & Planning

Its indigenous vegetation is Open Forest including tree species achieving an average height of 20 metres and canopy densities of 70%. Pine plantations have been established in Jenolan and Hampton State Forests. These are prominent visual elements in the southern highlands of the catchment. Most of the terrain south of Solitary Creek to the mountains in Hampton State Forest has been cleared for grazing purposes.

3.6 Heritage Items

The City of Greater Lithgow Local Government area is significant in terms of heritage value having items of both historic and scenic interest which are considered worthy of conservation by the National Trust, the NSW Heritage Council and the Australian Heritage Commission. (1)

Natural areas of heritage value include the Blue Mountains and Wollemi National Parks, the Wolgan and Capertee Valleys, Pantoneys Crown and Hassans Walls because of their extensive sandstone plateau and escarpments which form deep walled valleys and are in a near natural state. Their difficult terrain plus the successful crossing of the Blue Mountains in 1813 allowing access to richer agricultural lands have meant that they remained undisturbed by urban or rural development.

Historic routes over the Mountains to what is now known as the Lithgow Valley include Lawsons Long Alley, Lockyers Road, Mt. York Road and Berghofers Pass. Convict labour was used in the building of the routes which have, in recent years, formed the "Blue Mountains Historic Crossings Walking Tracks" network, established by the Department of Lands.

The Lithgow area was settled in 1824 (and named "Lithgow's Valley" in 1826) because of the vast coal reserves and the cyclical growth and stagnation of the district is very much a response to the fluctuating demand for this resource.

The construction of the Victoria Pass Road in 1832, and later the Bells line of road in 1868, permitted further settlement of the areas to the west of the Blue Mountains. The township of Hartley was built in the 1830's and 1840's and is now an "historic site" reserve under the control of the National Parks and Wildlife Service. Structures within the site include the former Court House, former Royal Hotel, St. Bernard's Catholic Church and Presbytery, St. John the Evangelist Anglican Church, former Williams Store and the former Victoria Inn.

Further to the west the settlement of what is now known as Old Bowenfels was established in the 1840's - 1870's. Registered structures in this area include the Presbyterian Church, Hall, Sessions House and Cemetary, the former Railway Station and Station Master's House, "Cooerwull", Somerset House, "Methven", "Ben Avon", and "Fernhill".

(1) For further information, refer to unpublished Heritage Council document "Survey of Industrial Sites and Buildings in the Greater Lithgow Area".

The opening of the Zig Zag railway in 1869 connected Clarence and Lithgow through negotiation of rugged inclines.

The railway was closed in 1910 but is now run by enthusiasts who operate it for recreational use by the public.

The changing fortunes of the Greater Lithgow area are reflected in the rise and decline of other historic sites on the urban periphery. They include Lithgow Valley pottery site established in 1875 and closed in 1908 and the colliery and brickworks. The establishment of the Newnes Shale Oil Plant in the Wolgan Valley about 1911 was accompanied by the construction of a railway link between Newnes Junction and Wolgan Junction for transportation of the products. The plant was closed in 1935 but the ruins of the coke ovens can still be seen.

Glen Davis, the site of further shale industry development, was established in 1938 and closed in 1952 following flooding of the area and explosions within the works. The remains of this development stand as ruins but are still in evidence.

Two geological reference sites, of educational as well as scientific importance are: Mount Lambie and the Mudgee Overpass. These sites are identified in "The Geological Heritage of New South Wales Volume II prepared by Brett Stevenson for the Australian Heritage Commission and the NSW Department of Environment and Planning in April 1981. Both sites would be of interest to the general public as well as to student and geological groups. They should be given widespread publicity by means of explanatory brochures and sign posts, where appropriate.

3.7 Aboriginal Sites

The City of Greater Lithgow is considered important in terms of Aboriginal prehistory. A number of sites have been identified by the National Parks and Wildlife Service and several surveys have been undertaken as part of the Environmental Impact Statement for major developments. Listed sites include shelters, art sites, open sites, carved trees, middens, axe grinding grooves and rock engravings.

Ian Johnson of the Department of Prehistory in the Research School of Pacific Studies at the Australian National University prepared notes on the Aboriginal Prehistory of the Wolgan Valley for use by the National Trust in its study of that area*. He found indications that the Aboriginal occupation of both the Wolgan and Capertee Valleys dated back 11,000 years and were amongst the "oldest and richest sites in south-east Australia".

* For a more detailed description refer to R. Breckwoldt, "The Wolgan Valley", The National Trust of Australia (NSW).

It should be noted that knowledge of Aboriginal sites in the area is at present minimal and that there is significant potential for further archaeological research. The existence of many other sites of Aboriginal archaeological interest is highly likely due to the large tracts of relatively undisturbed country.

4. ECONOMIC BASE

4.1 Agriculture

Description of the Rural Areas of the City of Greater Lithgow

The area of the City of Greater Lithgow is 3,469 sq. kms, almost a third of which is taken up by the Wollemi and Blue Mountains National Parks. As indicated by both the Soil Conservation and Department of Agriculture mapping exercises, most of the remaining rural land is in the lowest classification in terms of both erodability and agricultural capability, having both high erosion risk and agricultural production potential.

The local government area cannot be neatly categorized as homogeneous in terms of agricultural production, however, three major agricultural areas can be distinguished.

- (1) The Capertee area to the North west of the Shire with its shaly soils and lower rainfall is suitable chiefly for grazing and forestry.
- (2) The Portland/Wallerwang/Lithgow areas, despite its bleached soils prone to acidity, has an extremely high average rainfall and therefore has considerable potential for increased agricultural productivity.
- (3) The southern half of the local government area which includes Hampton/Hartley and part of the Kanimbla and Megalong Valleys is the richest agricultural land based on predominantly 'Bathurst' granite soil. Apple orchards proliferate in the Hartley Vale area, while Hampton borders on the rich fat lamb breeding areas of the Oberon Shire.

The Department of Agriculture under the direction of Murray Nott has mapped the rural areas of the Greater Lithgow Council, adhering to the new guidelines contained in the Rural Land Evaluation Manual prepared by the Department of Environment and Planning (November 1981). (Refer Map)

The "Agricultural Capability Map" is an attempt to classify the agricultural quality of the land within the study area. The mapping reflects the agricultural capability of the land, it is not trying to reflect existing land use. The main criteria used in determining the boundaries of the 5 classes of agricultural land were: (1) soil type, (2) slope, (3) vegetation, (4) current land use, (5) established agricultural practices.

Accompanying the "Agricultural Capability Map" the Department of Agriculture produced a 49 page report, "A Study of the Agricultural Capacity of Lands in the City of Greater Lithgow".

This report contains an interesting analysis of agriculture in the Lithgow area. Extracts from the report are produced below.

Of central concern to the Department of Agriculture "is the often insidious but continuing fragmentation of good agricultural lands into non-economic units without regard to the quality of the land involved" (1) The report goes on to point out that "The fragmentation of good rural land into small less efficient units has an immediate and direct effect on costs of production" (2). Reference is made here to increased distance from markets, increased rates, increase in the incidence of problems associated with controlling noxious weeds and increasing lack of economies of scale, e.g. capital costs of such things as cattle yards, tractors are high for 40 ha farms, etc.

The Department of Agriculture also provided statistics on Agricultural Production. In the financial year 1979-1980 the total value of agricultural commodities produced in the Lithgow area was \$6,527,000, i.e. 0.3% of the State's agricultural commodities. This is low compared with the production value of the Mudgee Shire, which contributed \$19,856,000 in the same financial year or Evans and Oberon which contributed \$21,347,000 and \$11,101,000 respectively. However, as the Department of Agriculture points out, because there is a limited amount of land in the Greater Lithgow area suitable for agriculture actual production value per hectare compared with other regions is quite high (3).

This is partly due to the relatively high rainfall in the Lithgow rural areas. Average annual rainfall at Lithgow is 865, Sunny Corner 929, and Capertee 837. These readings compare favourably with recordings taken further inland, such as Dubbo - 574 and Forbes - 514.

Tables on the Volume and Value of Agricultural Production 1977-1981 supplied by the Department of Agriculture are produced below.

	Prod'n Value \$000s		Prod'n Value \$000s		Prod'n Value \$000s		Prod'n Value \$000s	
--	------------------------	--	------------------------	--	------------------------	--	------------------------	--

CROPS (tonnes)

wheat	34	3	82	8	91	11	80	na
oats	299	27	154	10	265	20	84	na
other cereals	173	38	174	na	121	na	134	na
hay	1218	74	2590	107	1065	118	1456	na
pome fruit	402	118	970	229	118	47	495	na

LIVESTOCK (No.)

cattle	45709	1804	40008	3126	36823	4085	30196	na
pigs	94	4	33	13	479	32	611	na
sheep & lambs	150031	460	153260	414	150044	667	138209	na
lambs marked	58731		58726		63249		51885	na
wool (tonnes)	583	1117	607	1262	591	1462	487	
Farm gate value of commodities produced		3648		5257		6527		

na = not available

TABLE: CITY OF GREATER LITHGOW - VOLUME and VALUE
of AGRICULTURAL PRODUCTION 1977-1981

As can be seen from these figures, the agricultural commodities with the highest dollar value in the area 1979-1981 were:

Cattle (meat)	\$4 million approximately
Wool	\$1½ million approximately
Sheep (meat)	\$600,000 approximately

The importance of all cattle grazing would be partly attributable to the number of city farmers who find the management of cattle a less demanding weekend past-time than cropping or sheep breeding, with its associated shearing and crutching problems.

(1) p.4 Department of Agriculture Paper

(2) p.5 Department of Agriculture Paper

(3) p.24 Department of Agriculture Paper

Other figures produced by the Department of Agriculture that are of relevance to this Study are those relating to Agricultural Establishments and the Distribution of Rural Holdings. The tables and comments are presented below.

" Area and Number of Holdings

Since 1974/75 the area and number of agricultural establishments recorded by the Australian Bureau of Statistics has fallen significantly as illustrated in the table below.

<u>YEAR</u>	<u>TOTAL AREA (ha)</u>	<u>NUMBER</u>
1974/75	149868	540
1975/76	146688	528
1976/77	126553	308
1977/78	118456	259
1978/79	134761	281
1979/80	122281	305
1980/81	126101	313

TABLE: AGRICULTURAL ESTABLISHMENTS

The drop in the number of holdings from 540 in 1974/75 to 308 in 1976/77 is principally due to changes in definition. In 1974/75 holdings greater than one hectare were recorded, whereas in 1976/77 all holdings which produced less than an estimated \$1,500 gross from agricultural activities were excluded. This change meant that in the Lithgow area 232 holdings and 23,315 hectares were removed (average size per holding of 100 ha). At the New South Wales level, over 4,000,000 hectares and 21,000 holdings were effectively deleted.

Since subdivision and small rural residential holdings are of particular interest to this Study, further information was obtained from the Valuer General's Department. Using their 1982 figures, the size distribution of all holdings of one hectare or greater was constructed.

<u>CLASS (ha)</u>	<u>HOLDINGS (No.)</u>	<u>%</u>	<u>CUMULATIVE %</u>
0 - 20	767	47.55	47.55
20 - 50	291	18.04	65.69
51 - 100	172	10.66	76.25
101 - 150	98	6.07	82.32
151 - 300	147	9.11	91.43
301 - 450	53	3/29	94.72
451 - 600	32	1.98	96.70
601 - 750	18	1.12	97.82
751 - 900	9	0.56	98.38
901 - 1200	13	0.81	99.19
1200	13	0.81	100

1613 100

TABLE: DISTRIBUTION OF RURAL HOLDINGS

The Valuer General's Department in fact has 2,238 rural holdings recorded in the city area. The main reason for the discrepancy is that the figures for the above table included only those holdings recorded in Parish areas. Small holdings with street addresses were not recorded. Obviously large area holdings used for industrial or commercial purposes (e.g. mining), were excluded.

The above analysis clearly indicates the extent of rural subdivision that has already taken place. From previous discussion relating to the ABS data it also appears that many small holdings are being under-utilised. The average return per hectare in 1979/80 was considerably less than the district average of \$53.38." (1)

This extra work carried out by the Department of Agriculture is of great assistance to this rural study because it gives a clear picture of the degree of fragmentation that has occurred, e.g. 65.5% of all holdings are under 50 ha and there are only 138 holdings in the City of Greater Lithgow with an area over 300 ha.

The Department of Agriculture concluded their valuable document with conclusions and recommendations which will be discussed in Section 11 of this report.

Forestry Production

In discussing the value of agricultural production in this report, it appears appropriate to include forestry. The reason for doing so is that forests are a renewable resource (in contrast with metals and minerals) and compete with traditional agricultural pursuits for suitable acreages.

The City of Greater Lithgow forms part of the Bathurst Forestry District for which a plan of management has recently been prepared. The elevation and rainfall of land near Lithgow makes the district highly suitable for the cultivation of radiata pine. In 1981 the Bathurst Forestry District consisted of approximately 48,000 ha of Radiata Pine in State Forests and 12,500 ha of Radiata Pine in private plantations. Approximately 30% of the forests of the Bathurst District lie in the Greater Lithgow area, with the major forests being Sunny Corner, Hampton, Newnes, Ben Bullen and Capertee.

Expenditure in the Bathurst Forestry District in 1980-81 was \$3½ million (approximately). Figures supplied by the Forestry Commission (1980) on proposed future plantings in the Bathurst Forestry Region suggest the Commission intends to almost double the existing acreage and increase the production of pulpwood by 840% by 1990 and sawlogs by 290% in the same year.

(1) pp. 22 and 23 Department of Agriculture Paper.

A major beneficiary of increased logging in the area will be the local hauliers. In fact, the transport industry, both rail and road, will be a major beneficiary of the increase in forestry production.

4.2 Coal Mining and Resource Based Industry

The City of Greater Lithgow is at the heart of the Western Coal District. In 1979 there were 10 mines operating in the area with a raw coal production of 4.5 million tonnes per annum. More recent figures supplied by the Joint Coal Board show the growth in tonnage in the last two years:

	Western Coalfields (minus Ulan)	Total NSW
1980-1981	5,792,000	58,291,700
1981-1982	7,196,200	59,871,600

TABLE : COAL PRODUCTION PER ANNUM

These figures indicate the State importance of the Lithgow coalfields, showing that in 1980-1981 production amounted to 10% of the State total and in 1981-82 this had increased to 12% of the State total.

At the same time as coal mining was expanding in the Lithgow District, so was electricity generation. The Electricity Commission had been expanding its Wallerawang Power Station for some time, adding two 500 megawatt units in 1976 and 1980.

The continuing expansion of the coal mining industry and electricity generation in the Lithgow area a year ago was anticipated to proceed at a dramatic rate. In April 1982 for instance, the new 1320 MW (2 x 660) power station at Mount Piper was expected to have the following workforce growth.

	1981	1982	1983	1984	1985	1986	1987	1988
Constructional	110	220	440	825	1760	2200	935	88
Operational	-	-	-	-	52	255	389	442
TOTAL	110	220	440	825	1812	2455	1324	530

TABLE : MT. PIPER WORKFORCE DEMAND

YEAR	PULPWOOD (MB)	SAWLOG (MB)
1980	57,150	90,000
1990	480,000	260,000
2000	480,000	840,000

TABLE: PULPWOOD AND SAWLOG AVAILABILITY,
BATHURST FORESTRY DISTRICT TO YEAR 2000

Forestry: Future Employment Prospects

Personnel from the Forestry Commission Lithgow Office indicated there are few Lithgow residents employed in the industry. Most loggers are farmers from adjoining Shires, e.g. Evans, Oberon, the Lithgow workforce being more attracted to the high wage jobs offered by the mining and power generation plants.

A new pulpmill/sawmill has been planned in the Bathurst Forestry Area since 1979. Bathpine was originally the company organizing the capital to establish a highly mechanized mill at a railhead near Brewongle, with an estimated permanent workforce of 300 persons. The rights to timber have been transferred to Australian Paper Manufacturers. It appears certain that this new mill will be established in the Bathurst Forestry District in the next ten years (not necessarily at Brewongle) to process the maturing large plantations of radiata pine.

YEAR	CONSTRUCTION	OPERATION	
1982-83	20	-	
1983-84	20	10	(Treatment Plant in Operation)
1984-85	507	25	
1985-86	731	unknown	(Saw-mill in Operation)
1986-87	731	unknown	(Pulp-mill in Operation)

TABLE: PROPOSED EMPLOYMENT AT THE APM PULPMILL

However, with the fall in demand for electricity due to the depressed state of the steel industry and other manufacturing industries in the State of New South Wales, on 1 February 1983 the Electricity Commission announced the deferment of the Mount Piper Project. Mount Piper Unit 2 was originally programmed for February 1987 and the revised programme is August 1988 (a delay of 18 months), Mount Piper Unit 1 was originally programmed for August 1987 and the revised programme is August 1989 (a delay of 24 months). (1)

Similarly, at the commencement of 1981, new coal projects were expected to proceed, such as Austen and Butta's East Lithgow mine and the Birds Rock Mine (a joint venture between Elcom and a Japanese consortium). Expansion in output was proposed for other mines (Hermitage/North Hermitage, Wallerawang, Baal Bone). The current situation is that the Birds Rock has been indefinitely deferred and all other companies are reviewing the feasibility of new projects.

The Financial Review reported on 29 March 1983 that it appears there will be a \$US10-12 per tonne cut across all of the coal types in terms of 1983 contracts, with the Japanese. The prediction is that, "The price cuts will force many coal exporters, especially those in NSW and Queensland with underground operations to look hard at what were marginally profitable or loss-making operations." (2)

The Bulletin Business Section, 29 March, 1983, confirms this gloomy prediction, stating that, "Half of Australia's steaming and soft coking coal mines will be unprofitable in the year ahead, following price cuts imposed by Japanese and other coal buyers.....It now appears that, with the reductions being sought by the Japanese, Australian coal producers will face cuts of around \$US10 a tonne in steaming coal (down from a peak of around \$US55) to as much as \$US12-14 a tonne for hard coking coal (from a peak of \$US66 per tonne)". (3)

The same Bulletin article quotes Sydney resources economist, Dr. Ian Storey, "That in 1982 the entire Australian coal industry returned a 6.6 per cent profit on shareholders funds, compared with an inflationary back-drop of around 12 per cent.

(1) Electricity Commission of New South Wales - Performance and Future Direction. Report to the Minister for Energy, 1 February 1983.

(2) Coal: Japan Wins, Glenn Dyer, p.1 Financial Review 29 March 1983.

(3) P.115 Bulletin, 29 March, 1983: "Some Hope in a Gloomy Coal Output", David Hazelhurst.

	1980	1981	1982
Total Revenues	\$1828m	\$2283m	\$2781m
Pre-Tax profit	\$ 509m	\$ 504m	\$ 503m
Government Take	\$ 315m	\$ 324m	\$ 336m
Profit After Tax	\$ 194m	\$ 180m	\$ 167m
Return on Shareholders' Funds	16.8%	10.2%	6.6%
Av Shareholders' Funds	\$1186m	\$2135m	\$2743m
Total Borrowings	\$ 532m	\$ 711m	\$1599m
Debt/Equity Ratio	0.34	0.27	0.54

TABLE : COAL INDUSTRY PROFITABILITY 1980-82

As the table above shows, the profitability of the Australian coal industry has been falling steadily since 1980 as the industry has been squeezed by stagnant export prices and increasing government charges which now account for nearly 70 per cent of pre-tax profits.

While Storey predicts 1983 will be probably the worst year on record for the Australian coal industry, importantly for the future of the Lithgow region, Storey does believe despite the present pessimism the market will turn around in the next year or two. This prediction is based on the fact that "Australia's geographic position gives it the cheapest ocean freight rates to the important Japanese markets, where it is capable of landing coal at several dollars a tonne below new mine suppliers from the west coast of the United States, and at even lower landed prices than European producers." (1) Storey also points out that, "While the Australian cost advantage is by no means a commanding one, the excellent thermal qualities and vast quantities of Australian reserves will combine to enable Australia to become the world's major exporter of steaming coal, with exports increasing from 12 million tonnes a year in 1981 to 50 by 1990.

"This forecast is predicated upon steaming coal accounting for a steadily increasing share of Japanese energy requirements and the Japanese market being supplied by Australian 40 per cent, USA 20 per cent, South Africa 20, Canada 10 and China 10 per cent."

So while the financial press is predicting a bleak short term future for the coal industry, the long term prospects look less gloomy, especially for low-cost established mines such as Oakbridge's operations at Clarence and Hermitage.

The challenge to those planning the future of the City of Greater Lithgow is to ensure that forward planning decisions are made now so that if the coal mining industry recovery

(1) P.116 Bulletin, 29 March, 1983: "Some Hope in a Gloomy Coal Outlook". David Hazelhurst.

coincides with the construction of the deferred Mount Piper Power Station, adequate town and rural living opportunities are available for new residents.

The advantage the City of Greater Lithgow has over some mining regions is that the local economy is more diverse, and the area is insulated to a degree to fluctuations in coal export prices because a large proportion of present employment is associated with the Wallerawang Power Station and much future employment is associated with Mount Piper.

Appendix C to the Kiphill Pty. Limited Greater Lithgow local environmental study 'Employment in the Coal and Power Industry' shows that the construction of the Mount Piper Station alone will be the single largest project in the Greater Lithgow area in the next five years. The deferment of this project is obviously a set-back to employment in the Lithgow Region at a time when the prospects for the opening up of new mines looks temporarily bleak.

4.3 Manufacturing Industries

Manufacturing

Major manufacturing industries in Lithgow have no connection with coal mining or power generation industries.

The largest manufacturing concern is the Small Arms Factory which was established in Lithgow in 1912. At present the factory employs 1115 persons. In the 1950's and 1960's Lithgow was regarded as a depressed area and the former Department of Decentralization and Development gave assistance to industry to locate there.

Industries assisted to locate or given payroll concessions in the Lithgow area include:-

Name	Industry Activity	Total Employment (1980)		
		M	F	T
Berlie Hestia Ltd.	Clothing	4	102	106
Ferrero Aust Pty Ltd	Confectionary	37	31	68
Jeffson Pty Ltd	Clothing	8	184	192
Lithgow Mercury P/L	Newspaper	16	3	19
Stramit Industries Ltd	Wood, wood production	14	1	15
Turner M & J	(no info available)			
Woodtex Manf. P/L (taken over by Stramit Industries November 1977)	Particle Board			
Gazal Ind.	Clothing	7	179	186

Recent depressed economic conditions have meant all these firms are experiencing economic difficulties.

4.4 Service Industries

Industries to benefit directly from increased employment and population growth are chiefly the retailing and building industries. A new shopping centre has been located in Lithgow due to increased sales of groceries, household items and presents. Building completions have almost doubled. Other service industries to benefit are the hoteliers, caravan park operators, car repairers and fast food operators. More specialist shops such as hardware outlets report no major increase in sales.

The 'Employment Issues' study found that there would be very little direct industrial spin-off from the resource-based developments because of the heavy reliance on either Newcastle, Illawarra or Sydney based suppliers or machinery with associated maintenance work similarly being exported. Of 95 companies servicing and supplying the mining industry in Lithgow, only 7 have warehouses or factories outside the metropolitan area*. Not will the construction work generate much local spin off. Even Portland Cement expects no significant increase in demand for the products of its large cement works.

4.5 Tourism

Tourism in the Lithgow area is often seen as an extension of the scenic trip to the Blue Mountains, or a handy refuelling spot on the trip west to the Bathurst "gold country" or north to the Mudgee vineyards.

The Council area of Greater Lithgow, however, contains very unique tourist attractions that, with appropriate promotion, can benefit the local economy.

Trips to Newnes and Glen Davis combine exotic scenery with opportunities to explore relics of early shale oil mining ventures. The Zig Zag railway provides an unusual family recreational activity, while the historic village of Hartley is perfectly located on the Great Western Highway to attract numerous visitors to its authentically restored buildings. The Zig Zag Railway and Hartley village are increasingly being written up in the Sydney Press's entertainment columns as tourist delights in addition to the traditional day trip to the Three Sisters at Katoomba or Mt. Victoria. Headings such as "Zig Zag to a day in the Mountains" appear in the Good Living Section of the Sydney Morning Herald.

The Greater Lithgow Council has set up a Greater Lithgow Tourism Management Committee to manage the promotion of tourist facilities. This Committee assisted the Central Western Region section of the Department of Leisure, Sport

* Western Advocate, November 24, 1981.

and Tourism in carrying out the Lithgow Tourist Survey, December - January 1982. Forms were left at Hartley Village, the Zig Zag Railway and Eskbank House. The largest response came from Hartley and the Zig Zag Railway with 149 and 120 forms completed, while only 19 were filled in at Eskbank House.

Interesting information to come out of the survey is that the Zig Zag Railway on the Bell Road attracts 43.6% of the visitors from Sydney, while Hartley on the Great Western Highway, a major interstate route, attracts only 28.4% from Sydney, the rest being NSW Country - 30%, Interstate - 30% and International - 10%. The difference in type of visitor to the two attractions is also highlighted in the question on 'reasons for trip', 47% of those visiting the Zig Zag Railway were visiting this attraction only (the day-tripper), while only 13.3% of tourists were only visiting Hartley. The majority of tourists (60.0%) to Hartley were "travelling on holidays".

Tourists awareness of other attractions was high for such a diverse local government area. Over half the visitors to the Zig Zag Railway were aware of the Wolgan Valley/ Newnes and the Coal Mines, a third knew of Glen Davis, there was not much awareness of Eskbank House or the Pottery. Visitors to Hartley were less conscious of other attractions in the Lithgow Region, again illustrating the difference in tourists to the two sites and that the marketing of the two attractions should be directed to different groups.

The comments on forms left at the Hartley Historic Site were mainly site specific, but there was a demand for more camping facilities (20% of those visiting Hartley had spent the last night camping). There was also a demand for better signs on the Highway listing features and locations.

The Bureau of Statistics has collected information on Tourist Accommodation in the City of Greater Lithgow but disaggregated information is only available for the September 1981 quarter which showed takings for accommodation amounting to \$76,000 for the three months from five establishments. This is a small sum and one must assume a lot of the accommodation is used by the numerous consultants and contractors visiting Lithgow, rather than the genuine tourist. The new Deodore motel at Marrangaroo has provided much needed up-market accommodation (approximately 40 beds).

More diverse accommodation is provided in the Shire itself, such as the holiday farm at Glen Davis and the time-sharing Holiday Farm at Little Hartley. More facilities are needed for campers at Glen Davis, the current new facilities including an amenities block of showers and toilets goes some way to improving the situation. Long term plans should be the result of negotiations between the Council of the City of Lithgow and the National Parks and Wildlife Service as to how this site can best be managed as a western entrance to the Wollemi National Park. Similarly, with

Newnes, discussions need to be instigated with the Service to improve camping grounds and walking tracks and repair the hotel to ensure this area improves as both a local tourist attraction and as a second western entrance to the Wollemi National Park.

School groups need to be encouraged to visit Lithgow and study the emergence of the early coalmining and iron smelting industries. The Electricity Commission is contributing to educational tours by employing a guide to show tourists over the Wallerawang Power Station.

A large component of the tourist trip in the area is linked to an increase in family groups touring by car. Therefore it is obvious any improvement to roads to Glen Davis and Newnes or along the Fish River to Tarana will assist the tourist industry, as well as improvements in directions and signage to look-outs and tourist attractions.

The construction of Lake Lyell by the Electricity Commission on the Cox's River some 6 km south west of the Lithgow urban area will provide a diverse recreational resource for the sub-region. A recent report points out, "Already there is sufficient evidence to establish that the demand for a range of land based water activities in the Lake Lyell environment is most significant." (1) The report predicts that the large dam "will contribute to the inflow of day visitors" to the area.

Tourism is included as part of the overview of the economic base of the local government area because of the growing recognition by local businessmen and councillors of the role tourism can play in increasing the wealth and diversity of the local economy.

It is important in a Local Environmental Study such as this to appreciate that tourist preferences are strongly linked to visual appreciation of landscapes and historic villages and that environmental controls on key scenic and historic areas can be justified in terms of the economic benefits to the sub-region. Important scenic look-outs occur at Mount York, the Bell Road, the Jenolan Caves road through to Hampton, Hassans Walls and Pearsons Look-Out over the Capertee Valley.

4.6 Conclusions

There is no doubt that in the City of Greater Lithgow coal mining and power generation can be identified as providing the economic base of the region. This contrasts with the neighbouring Shire of Oberon where a significant degree of income received by residents is both directly and indirectly related to agriculture and forestry.

(1) P. 37, Colin Donges & Associates, Lake Lyell and Environs, January 1983.

The balance between the major sectors of the local economy - mining, power generation, manufacturing, agriculture, forestry and service industries, has gravitated heavily towards the former industries. A diverse local economy, however, cushions the local population from a downturn in one sector. It is anticipated that in this Local Environmental Study every effort will be made to protect prime agricultural land, and to ensure the infant tourist industry is assisted by forward looking environmental protection.

5. SOCIAL CHARACTERISTICS

5.1 Introduction

Several major studies have been undertaken to analyse the future composition and wage structure of both the existing and future workforce in the City of Greater Lithgow. The main focus of this Study is to briefly discuss the socio-economic characteristics of the current population and expected newcomers to the area so as to anticipate what percentage of the population will be interested in rural living opportunities and consequently the range of opportunities that should be provided. This work is carried out in the knowledge that a major objective of the Greater Lithgow Shire is "that people obtaining jobs in this area should live within the City of Greater Lithgow" (1) and that new development areas in Lithgow "must be attractive in order that newcomers and those within Greater Lithgow wishing to re-locate, can live in a desirable environment" (2).

5.2 Community Profile

The population of the Greater Lithgow local government area is presently 21 000 with over half the residents residing in Lithgow (13,625) and the remainder in the industrial towns of Wallerawang (1850) and Portland (1965) and the rural areas (3560).

The census periods from 1954-1977 record a steady decline in Lithgow from a population of 16,103 to 12,343 respectively over the 22 years. The decline has been reversed with 1978 as the turning point.

Wallerawang was a small rural village until the construction of the Power Station there in the late 1950's.

Portland is as old as Lithgow and grew around the quarrying of a rich limestone deposit.

None of the villages in the Council's area have a population over 200*, although in the 1930's Glen Davis had a population of over 2,000 people.

1976 Census data informs that 91% of the population is Australian born, and the age structure of the local government area very much reflects the New South Wales

average with 26% of the population under 14 years of age. 65.9% of the population is in the 15-65 age group and 8.2% are over 65. Portland has a higher percentage of aged than Lithgow, and it has not been possible to get adequate information to characterize the rural villages in terms of age groups.

5.3 Workforce

Considerable work has been carried out by Kinhill, Gutteridge Haskins and Davey, the Department of Environment and Planning and the Department of Youth and Community Services. These studies are extremely relevant to any future physical and social planning for the Greater Lithgow Council - and various issues identified have relevance for the rural study.

Present Workforce

A brief analysis of the occupational structure of the Greater Lithgow workforce is presented based on the 1976 Census.

The overall occupational structure reflects the heavy dependence on manufacturing (particularly the metals sector) and mining: the tradesmen, etc., group accounts for 36% of the total employed workforce, (compared for instance with 32% in Sydney) with metal tradesmen alone accounting for nearly 14%.

Miners constituted only 6.4% of the employed workforce, but the mining industry also employed significant numbers of tradesmen (principally metal and electrical), equipment operators and engineers, draftsmen, technicians, etc.

The Professional, Technical Group constituted 9% of the employed workforce (compared, for example, with 13.5% in Sydney at the same census). Other groups which were under-represented compared to Sydney included administration (4.2% compared with 8.25%), Clerical (11%, 22%) and Sales (6.7%, 8.44%). By contrast, Lithgow's strategic rail location (the end of the electrification) and its significant coal traffic were reflected in a high proportion of transport and communication workers (.7%), whilst there were also a significant number of farmers, etc. (5.3%).

As discussed in Section 4 (Economic Base), the local economy has considerable diversity given the total size of the population.

(1) Mayor G. F. Martin, Citizen Guide 1981

(2) Council Minute to DEP, 27th July 1981

* Census figures for defined village areas. Figures for some villages plus their environs are over 200, e.g. Cullen Bullen 350.

Projected Workforce

(Refer Table, Appendix C, Kinhill Report)

Several points made about future workforce characteristics have relevance to the rural study.

(a) Competition for Skilled Labour

The point is made in the Employees Study that Lithgow is developing a "dual economy" - meaning there are indications that there could be a polarization of the Lithgow economic and social community into a high wage sector (i.e. those working in the power stations and the mines) and the rest.

A Joint Coal Board Survey in March 1979, for instance, estimated average weekly earnings in the Western Coalfields at \$434-80 per week.

Electricity Commission employees are also high wage earners and have the opportunity to earn large bonus because of over-time work.

The dual economy theory has increasingly lost validity as all sectors of the Lithgow workforce fight to survive the severity of the drought, the downturn in overseas demand for coal and the fall in domestic demand for electricity.

(b) Labour Poaching

There has been a considerable leakage of skilled tradesmen trained in local manufacturing concerns to transfer to highly paid jobs in the mines and Electricity Commission plants. Figures obtained from the Small Arms Factory illustrate the extent of the problem.

	Total Staff Started (all skills)	Total Lost	Total Tradesmen Started*	Total Tradesmen Lost
1977-78	153	127	15	48
1978-79	163	157	13	65
1979-80	223	188	27	57

* Does not include apprentices completing time.

TABLE: SMALL ARMS FACTORY - STAFF TURNOVER

The problem is also experienced in the agriculture sector, where farmers are unable to compete in local wage markets. The Forestry Commission also experiences similar problems but so far has been able to employ local farmers from neighbouring Shires anxious to supplement their income.

(c) Lack of Female Employment

Female participation in the workforce is low - 33.8% as compared with the New South Wales average of 44.6%. Traditional employment opportunities in the area have been male orientated. The industries of particular concern in the rural study - agriculture and forestry - are also traditionally the preserve of the male wage earner. It is only in manufacturing and service industries such as tourism that females can anticipate more immediate work opportunities being created.

(d) Leisure Time and Lifestyle

A characteristic of the workforce that has relevance to the rural study is the hours worked by Electricity Commission employees and miners. Both groups have attained a 35 hour week and, although overtime is often involved, there is obviously the time to commute to as well as work on a small farm. While the "Employees Study" observes that there was some evidence that the actual "Federation" miners might be likely to settle in Lithgow itself, management at Elcom and the mines (Baal Bone EIS indicates this group is 10% of future workforce) may prefer to locate in the country. Certainly this has been the case in the Illawarra coalfields, where managers have tended to locate at Bowral and Moss Vale.

5.4 Future Population Growth in Rural Areas

The forecasts of population growth set out by the Kinhill Pty. Ltd. in the Greater Lithgow Environmental Study are accepted as the basic growth figures for this study while acknowledging these figures are currently being reviewed by the Department of Environment and Planning to make provision for the deferment of various projects, especially Mount Piper and Bird's Rock Mine

	1980	1985	1990	2001
LITHGOW	13,000	17,249	20,029	22,373
WALLERAWANG	1,600	3,301	4,414	5,351
PORTLAND	1,900	2,342	2,632	2,876
RURAL	3,500	3,908	4,175	4,400
TOTAL	20,000	26,800	31,250	35,000

Preliminary investigations by demographers in the Department of Environment & Planning suggest that the new population estimates for the year 2000 will be 4-5000 less than previously predicted in the Kinhill Report. Apart from reflecting the cancellation of resource based projects the new population estimates also reflect the fact that more recent research on workforce multipliers indicate that 1.1 rather than 1.45 is a realistic resource industry multiplier for the western coalfields.*

One minor matter of debate with the assumptions of the Kinhill study which has relevance to the rural study is the assumptions made on the distribution of population between different centres. The Kinhill report anticipated the following distribution of future population: Lithgow - 52.5%; Wallerawang - 25%; Portland - 6.5% and Rural - 6% (including rural areas and villages). In this report it is suggested that a minimum of 12% of newcomers (including Sydney-based hobby farmers) will choose to reside in country areas.

This assumption is based on the following facts:

(a) Recent building approval figures supplied by Council indicate that between 1978 and 1982 34% of new dwellings have been erected in areas other than Lithgow, Portland or Wallerawang, with another 30 lots built on in the rural villages.

Year	Rural	Lithgow	Wallerawang	Portland	Villages	Totals	Rural %
1978	28	28	11	6	4	77	36%
1979	39	21	23	8	9	100	39%
1980	44	31	19	13	4	111	40%
1981	40	38	10	25	11	124	32%
1982 to Sept	23	41	8	19	2	93	25% past year
TOTAL	174	159	71	71	30	505	34%

TABLE : BUILDING APPROVALS FOR DWELLINGS

The above are for new dwellings and do not include alterations, extensions, etc.

* D. Roman: Department of Environment and Planning.

(b) The Bathurst/Orange Newcomers Study 1971 carried out a survey which indicated 12% of new residents wanted to live in a rural setting. The relevance to the Lithgow situation is that by outside perception the towns of Wallerawang, Portland and Lithgow, because of their industrial orientation, are less attractive environmentally than the cities of Bathurst and Orange, therefore it is even more likely that newcomers in this Shire will prefer rural to city living.

(c) The McNair Anderson Recent Arrivals to Lithgow Study, August 1980, found that an overwhelming majority of newcomers are married and nearly two-thirds have children. 57% of the married employees have 2 or more children. Young marrieds with small children are a group that is often attracted to country style living because of the opportunities it offers to have pets and open space for outdoor hobbies.

(d) Apart from the rural living opportunities required by new people settling close to their jobs, the southern parts of the Greater Lithgow area that adjoin Oberon will continue to remain an attractive area for Sydney hobby farmers. This is because traditional hobby farm areas such as Dural and Camden are being incorporated in the urban fringe and these areas, along with places such as Moss Vale and Bowral, are extremely expensive.

It would appear from the reasons stated above that the Kinhill report under-estimated the demand for rural living opportunities and a much higher preference for rural living opportunities will be adopted in this report.

5.5 Villages and Adjoining Rural Areas

The public participation programme carried out by Jane Dixon has been an invaluable input into the rural study. Public meetings were held in Capertee, Cullen Bullen, Hampton, Lidsdale and Glen Davis, and numerous rural residents were contacted. The attitudes and expectations of residents were canvassed, in conjunction with an explanation of the financial implications for Council if the anticipated growth of the area takes place. This was done via the production of "growth charts" clearly and simply setting out the realities of Council's and the State Government's financial commitments to the area.

(a) Cullen Bullen (including Ben Bullen)

Population: Around 350.

Cullen Bullen is situated close to and north of Wallerawang on the Mudgee Road.

The village has a variety of community facilities - post office/Commonwealth Bank, primary school, sports oval, community hall, as well as hotels and a local shop. New-comers to the area are from other mining areas and Sydney. The existing community appeared positive in its desire to have new people moving in, bringing with them new ideas, better representation on Council, as well as reinforcing the viability of existing community facilities.

The existing Cullen Bullen community is obviously proud of the town, and perceive very few disadvantages from living there. Citizens appeared concerned that while there were people wanting to live in or near Cullen Bullen, no land was for sale. This comment might be somewhat exaggerated as in the last two months the Department of Lands put 3 blocks of land up for tender, one block at \$4,250 and the other two at \$3,500 and received only six applications.

Conclusion

The Cullen Bullen township has been back zoned to include only a small portion of the original village boundary. The village is hemmed in by State Forests on the north and east and suffers from the environmental problems of noise and pollution from the presence of dump sites, and the continual noise pollution and danger generated by coal trucks speeding through the town. The village, however, has a mains water supply. There is potential for the area to expand to the south-west.

(b) Capertee

Population: 175-200.

Capertee is situated at the northern extremity of the Shire, most of the village lining the Mudgee Road. Large scale grazing and mining are the main activities with a new mine planned to go into operation at Baal Bone to the south. The village has good facilities - primary school, community hall, railway station, post office/Commonwealth Bank, police station, as well as 2 shops, a service station and a hotel. Capertee is more isolated from other population centres than Cullen Bullen, and thus serves as an amenity centre for a more dispersed population while the hotels and service station would prosper from the increased industrial and tourist traffic using the Mudgee Road.

Comments recorded at the public meeting indicate a concern with the dangers of speeding coal trucks, and there was a request for a footbridge over the main road.

The residents saw definite advantages in more people living in Capertee, and there was obvious pride in scenic and historic places nearby. Residents wanted to see retained the Capertee Valley and State Forest, Turon Gates, the gold

diggings on Town River, the town of Excelsior, as well as historic buildings, e.g. Railway Station, Police Station and Courthouse and the painted tank and toilet!

There was a demand for more imaginative development at Capertee- remarks such as "no ¼ acre blocks" or "flex the building codes to suit the environment - this isn't Newtown" suggests a community wanting to develop a variety of rural living opportunities.

Conclusion

The village has no mains water supply and has been back-zoned to include only buildings along the main road. A significant area to the west of the highway is owned by the Department of Lands, and this area would be suitable for future settlement if an appropriate water and septic system could be arranged.

(c) Meadow Flat

Population: Around 150.

Meadow Flat is a small village which has recently suffered upheaval due to the widening of the Great Western Highway. Facilities include a primary school and showground. The main occupation of residents is stated as grazing and hobby farming, people here appear to identify more with Bathurst than Lithgow, with many farmers commuting to this City to use the services and saleyards.

The community appeared more ambivalent about more hobby farming in the area than residents of Capertee and Cullen Bullen. It appeared that most newcomers were from Sydney and Bathurst and not associated with local mining and rural concerns such as high rates, due to excessive subdivision was an issue. The community took a pride in the attractive peaceful setting of their area and wanted retained the Art Gallery, Old School Building (1882) and an old copper-goldmine.

Conclusion

Due to community attitudes and distance from Lithgow, it appears inappropriate to reintroduce a village zone. The settlement should remain a rural amenity centre with sensitive conservation controls on a few key buildings.

(d) Hampton/Rydal/Sodwalls

Hampton

Population: Around 180 people.

Hampton is situated on the Jenolan Caves Road on part of the ridge of the Great Divide. Just as Meadow Flat relates geographically and socially to Bathurst, so Hampton appears to relate to Oberon.

Local farmers concentrate chiefly on fat lamb and beef cattle production.

Facilities at Hampton include a Post Office/Commonwealth Bank, Primary School, plus 2 Churches, a hotel/motel and a service station.

Rydal

Population: Around 350 people (100 people in village
90 families living around)

Rydal is an historic village situated on the rail-line to Bathurst and is close to Wallerawang. It has a number of facilities, including a post office/Commonwealth Bank, Primary School, Railway Station, as well as a hotel, 2 Churches and a showground.

There appears to be a division of occupations and attitudes between villagers and those living in adjacent rural areas. The village people are mainly employed in the industrial towns, working on the railways and power stations, while rural residents are mainly hobby farmers.

Sodwalls

Population: About 20 families full-time and 5 families part-time.

Sodwalls is a very small village and has a primary school and railway station. Sodwalls is on the main water supply line.

Residents' Comments from Hampton/Rydal and Sodwalls

Viewpoints expressed by residents of these areas were more typically rural. Residents were anxious that small subdivisions would increase rates and force off the land the true rural producer. Concern was also expressed about the spread of noxious weeds, and the loss of peace through guns, minibikes and pets. Residents were obviously keen to retain the rural atmosphere of their area. It was only the village residents of Rydal who saw the advantages of improving local facilities such as roads and schools if newcomers settled in the area.

Conclusions

It is recommended that Hampton and Sodwalls remain rural amenity centres, but that Rydal because of its closeness to Wallerawang and access to a mains water supply should be zoned back to its original village boundaries to allow further residential development.

(e) Glen Davis

Population: 87 permanent residents and 57 weekenders.

Glen Davis is isolated at the end of the Capertee Valley. There are few facilities besides a General Store-Post Office and Holiday Farm. The Holiday Farm proprietor plays a major role in directing tourist activity in the area.

Resident opinion here focussed chiefly on the poor state of the road - saying it discouraged tourism and deterred new people moving into the area. There obviously was an appreciation of the bushland environment and the history of the oil shaling town.

Conclusion

The village be further developed as a tourist centre and there is an immediate need for a campsite near the river. An advantage Glen Davis has over other remote old mining towns is that it is on a main water supply line.

(f) Hartley/Little Hartley

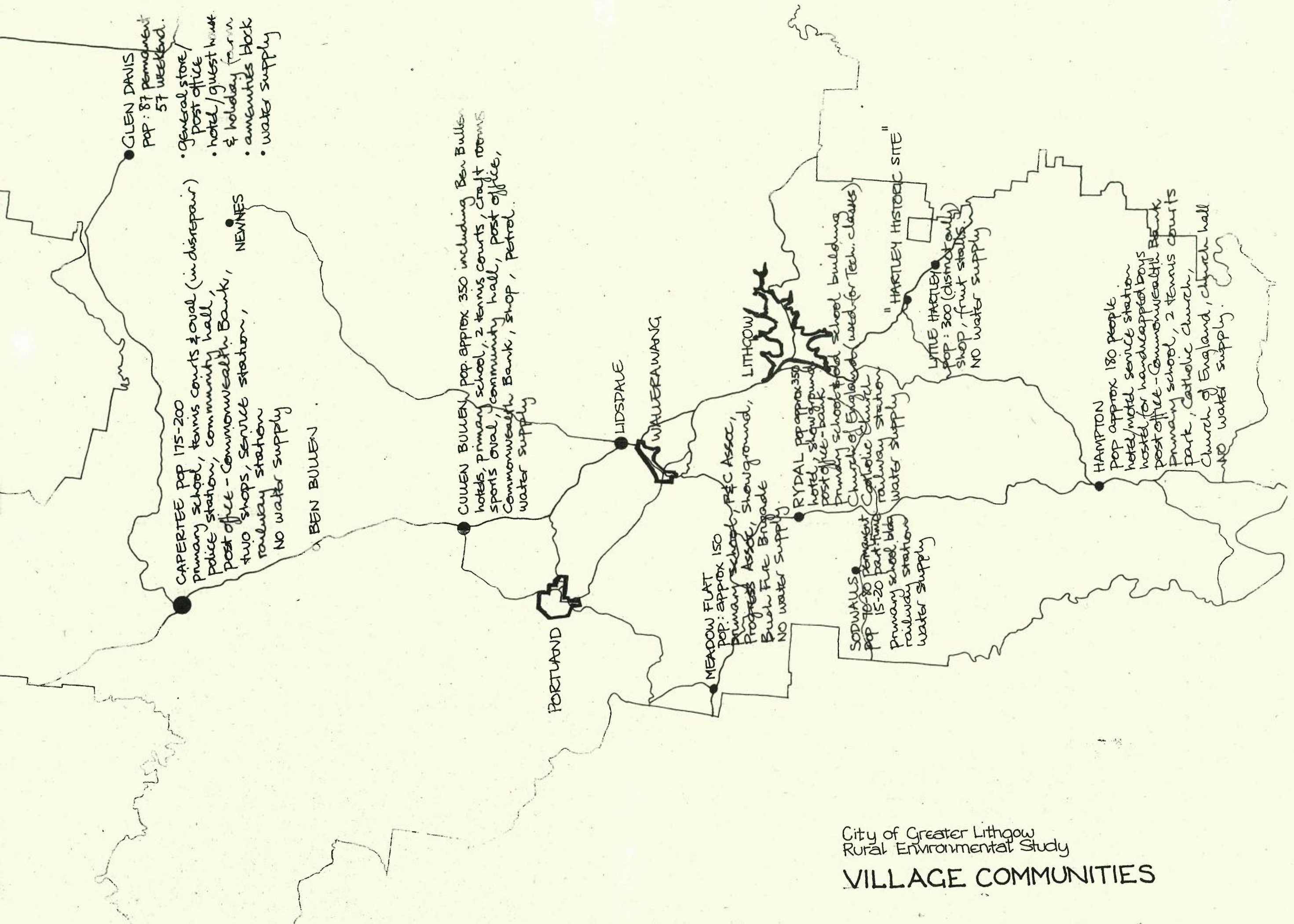
Population: Approximately 330 people.

Most residents live on orchards or rich grazing land, a number of hobby farmers have moved in the last 5 years.

No official meeting was held here, but it is one of the richest agricultural areas, with good access to Lithgow via both the Great Western Highway and Browns Gap Road.

Conclusion

While the scenic setting of the Hartley Historic Village must be preserved and the curtilages of early stone buildings at Little Hartley should be protected, the existing subdivision pattern suggests there are some areas suitable for small acreage subdivision that would offer high quality upper income homesites. This type of development, if properly planned, can be organized so very little prime agricultural land is alienated, e.g. clustering of homesites and use of commonage.



City of Greater Lithgow
 Rural Environmental Study
VILLAGE COMMUNITIES

6. LAND TENURE

6.1 Land in Public Ownership

As a direct contribution to this Study the Department of Lands in Orange has identified all those lands in the City of Greater Lithgow local government area which are in public ownership (including Crown Leases) and indicated the responsible public authority. On the basis of this input it has been possible to make the following comments. The accompanying map indicates the existing pattern of ownership within the local government area.

In the area to the north of the Great Western Highway, the majority of the land is in public ownership with the largest area being that within the Wolllemi and Blue Mountains National Parks. The National Parks and Wildlife Service is responsible for these areas plus the Pantoneys Crown Nature Reserve to the north of Lithgow and the Winburndale Nature Reserve, the northern extensions of which lie within the study area in the vicinity of Palmers Oakey Creek and Gong Gong to the north-west of Lithgow.

The Forestry Commission has large holdings with Sunny Corner, Capertee, Ben Bullen and Newnes State Forests to the north of the Great Western Highway and Falnash, Lidsdale, Hampton and Jenolan State Forests to the south.

The Department of Lands is responsible for vacant Crown land, public Crown land and Crown leases. These are scattered throughout the study area with the larger tracts being to the north around the Mount Genowlan, Blackmans Crown and Red Rock Creek districts.

Many of the Crown leases have qualifications on tenure, such as in perpetuity, special lease, conditional lease, town allotments, soldier settlement, etc., but for the purposes of this Study no distinction is drawn between them.

Lands reserved for public recreation are generally dispersed although considerable attempts are being made by the Department of Lands to link reserves as exemplified by the proposed walking track network along the Turon River to Capertee as part of the Macquarie-Turon Parkway. This is being undertaken within the concept of devising a system of regional parks to enable successful management of a variety of recreational pursuits suitable to natural and semi-natural areas. The Appendix lists twenty-nine major possible reserve areas in the City of Greater Lithgow covering some 28,000 hectares as a guide for possible inclusion within this system.

The Department of Lands is endeavouring to ensure scenic preservation of the hills around Lithgow, the natural

setting around Hartley and the escarpment surrounding Glen Davis.

The control of rural land for conservation, recreation or landscape purpose is the objective of the Department of Lands recent policy to "retain in Crown ownership wherever possible all lands which have no prudent use other than scenic and catchment area protection, timber production, recreation or nature and habitat conservation". (1979)

The control of rural land for conservation, recreation or landscape purposes is therefore best managed by the Department of Lands. This identification of rural lands for these purposes and the existence of the management potential of the Department is an extremely important planning component in the control of rural lands.

6.2 Private Holdings

As has been shown in Section 6.1 the majority of rural lands within the City of Greater Lithgow are not in private ownership.

The size of holding within the local government area includes a range from small rural residential (2ha) up to properties of a thousand or more hectares. Most of the area is marginal agricultural land with poor soils, steep slopes, dense vegetation, lack of access, etc. The pattern of tenure is extremely mixed with generally the larger holdings having the poorest soils and least accessible locations whilst the reverse is true for the smaller holdings which are generally situated in better quality, easily accessible country. As pointed out in the research carried out by the Department of Agriculture, 65% of holdings (1055) in the Greater Lithgow area are under 100 ha and only 138 properties are over 300 ha in size.

In referencing the private holdings back to information supplied by Soil Conservation and Department of Agriculture it can be seen that the tenure pattern shows larger holdings of 400 to 1,000 hectares on the poorer quality, less accessible land in the vicinity of Palmers Oakey to the north-west of the Study Area. Holdings up to 600 hectares are also evident in the rougher south-east area towards the Kanimbla Valley although smaller subdivisions of about 10 hectares are interspersed.

Holdings of 100-500 hectares occur over the Rydal, Hampton and Lowther areas, with smaller holdings of 10-20 ha scattered throughout. These smaller holdings also occur in the Lidsdale area.

40 hectare subdivisions are located in the Capertee Valley along the Glen Davis road and around Glen Davis itself, and along Trunk Road 55 to Mudgee, particularly around Capertee, Ben Bullen and to the south of Cullen Bullen.

As can be seen, the tenure pattern is mixed throughout the Study Area. The proximity of Greater Lithgow to Sydney has made it a desirable location for city-based hobby farmers who are seeking weekend rural retreats regardless of the agricultural capability of the land. The recent high amount of rural residential subdivision applications received by Council is an indication of a reinforcement of this trend which is shown to be far greater than has been experienced in other Shires within the Central-West Region. This demand will be further discussed in Sections 7.4 and 8.12.

6.3 Land Values

The assistance of the Valuer-General's Department in Bathurst has been valuable in assessing significant land value changes in the City of Greater Lithgow. The Valuer-General's officers were asked to indicate from knowledge of local sales the degree of price escalation of land for the period 1976 to the end of 1981.

The following Tables give an indication of the rise in value of both town and country land holdings without in any way being presented as "benchmark values". This qualification is made because in several instances, particularly in the villages, often only one sale has been recorded. In such instances, the sale price becomes questionable as an indicator of average value because of the special circumstances that may exist on the site, e.g. access to a river, extent of pasture improvement, special views, etc.

It also must be noted that land values at the end of 1981 peaked - coal mining prospects seemed limitless, the boom in power generation in the region appeared certain, and the unending drought combined with depressed stock prices had yet to have its full impact on both permanent and part-time farmers. Some degree of speculative interest also must be read into the following land value prices.

Proximity	1976	End 1981	% Increase over 5 years
Lithgow	8,000	30,000	375%
Portland	5,000	25,000	500%
Wallerawang	8,000	30,000	375%
Rydal	4,000	20,000	500%
Meadow Flat	5,000	25,000	500%
Sunny Corner	4,000	25,000	625%
Glen Davis	3,000	10,000	333%
Capertee	3,000	10,000	333%
Cullen Bullen	4,000	22,000	550%
Clarence	5,000	22,000	440%
Hartley	6,000	30,000	500%

TABLE : RURAL LIVING OPPORTUNITY (1-5 ha)

Proximity	1976	End 1981	% Increase over 5 years
Lithgow	30,000	90,000	300%
Portland	20,000	65,000	325%
Wallerawang	20,000	65,000	325%
Rydal			
Meadow Flat	20,000	65,000	325%
Sunny Corner	18,000	65,000	361%
Glen Davis	12,000	34,000	283%
Capertee	10,000	30,000	300%
Cullen Bullen	20,000	65,000	325%
Clarence			
Hartley	30,000	110,000	366%

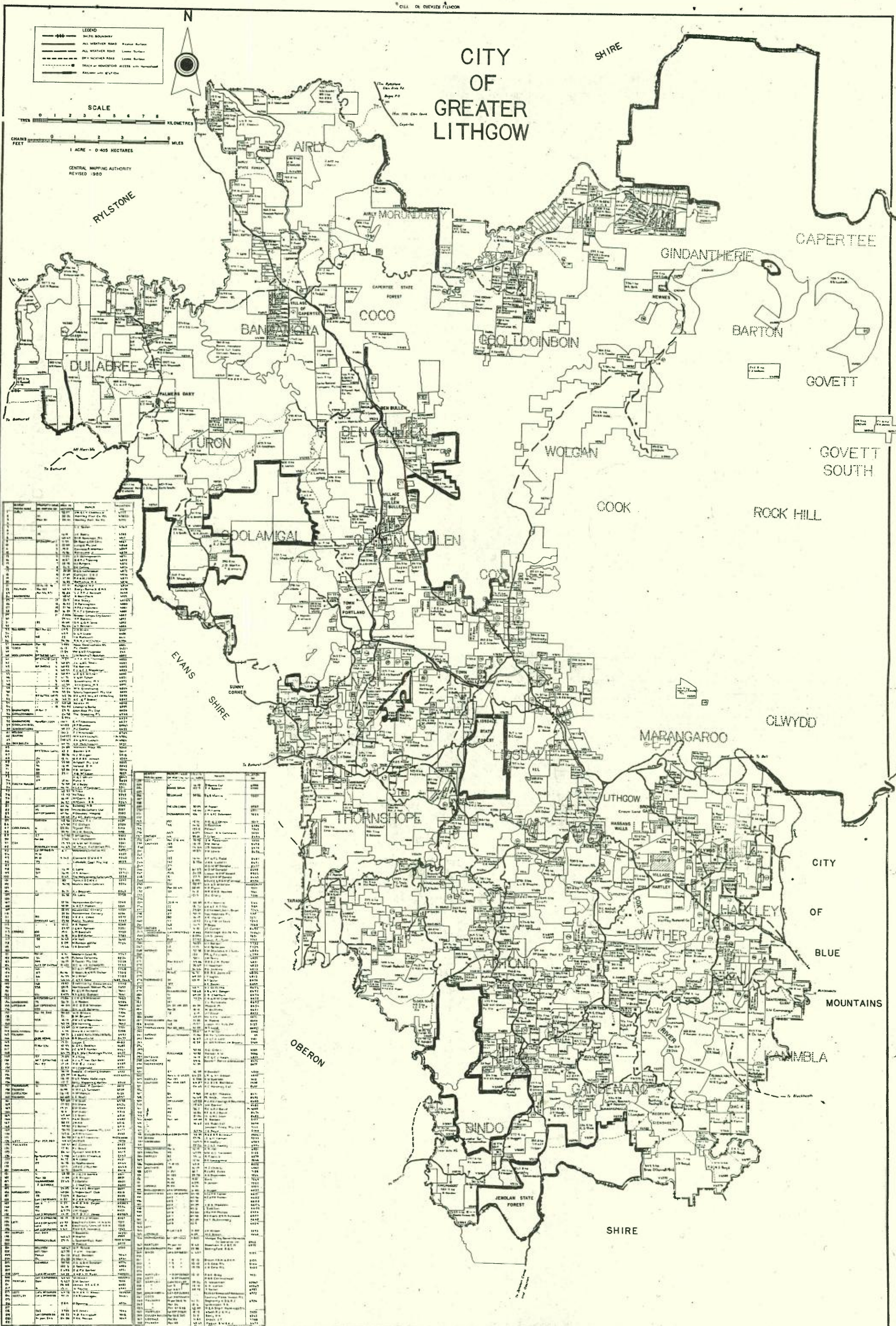
TABLE : HOBBY FARMS (40 ha approximately)

Proximity	1976	End 1981	% Increase over 5 years
Lithgow	15,000	35,000	233%
Capertee	12,000	30,000	250%

TABLE : LARGER RURAL RETREATS MORE THAN 40 ha
MAINLY ON POOR AGRICULTURAL LAND

Proximity	1976	End 1981	% Increase over 5 years
Lithgow)			
Hartley)	500	1,500	300%
Portland)			
Wallerawang)			
Sunny Corner)	325	1,000	308%
Meadow Flat)			
Cullen Bullen)			
Rydal)			
Glen Davis)	125	300	240%
Capertee)			

TABLE : GENERAL GRAZING COUNTRY (Value per hectare)



LEGEND

- SHIRE BOUNDARY
- ALL WEATHER ROAD - PAVED SURFACE
- ALL WEATHER ROAD - GRAVEL SURFACE
- DRY RICKER ROAD - GRAVEL SURFACE
- TRACK OR HOVED ROAD ACCESS WITH UNPAVED SURFACE
- RAILWAY LINE

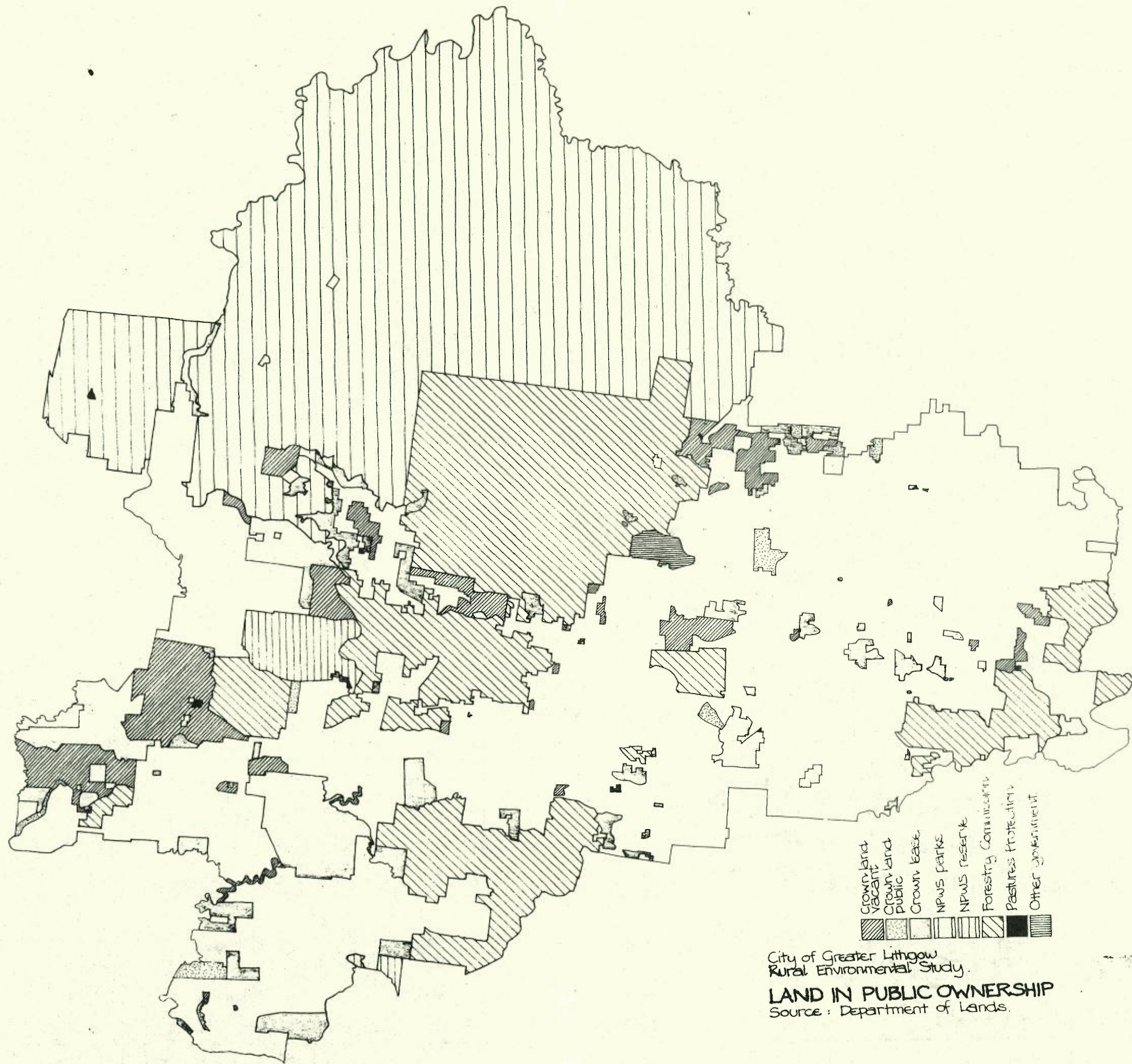
SCALE

0 1 2 3 4 5 6 7 8
KILOMETRES
0 1 2 3 4
MILES
1 ACRE = 0.405 HECTARES

CENTRAL MAPPING AUTHORITY
REVISED 1980

Parcel No.	Area (sq m)	Area (sq ft)	Owner Name	Address	Notes
100/100	1000	10764	John Smith	100 Main St	Commercial
100/101	1000	10764	Jane Doe	101 Main St	Residential
100/102	1000	10764	ABC Pty Ltd	102 Main St	Industrial
100/103	1000	10764	DEF Pty Ltd	103 Main St	Commercial
100/104	1000	10764	GHI Pty Ltd	104 Main St	Residential
100/105	1000	10764	JKL Pty Ltd	105 Main St	Commercial
100/106	1000	10764	MNO Pty Ltd	106 Main St	Industrial
100/107	1000	10764	PQR Pty Ltd	107 Main St	Residential
100/108	1000	10764	STU Pty Ltd	108 Main St	Commercial
100/109	1000	10764	VWX Pty Ltd	109 Main St	Industrial
100/110	1000	10764	YZA Pty Ltd	110 Main St	Residential

PRIVATE HOLDINGS
Source - Valuer General



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LAND IN PUBLIC OWNERSHIP
 Source: Department of Lands.

Proximity	1976	End 1981	% Increase over 5 years
Lithgow	6,000	22,000	367%
Portland	2,500	8,000	320%
Wallerawang	3,500	10,000	285%
West Marrangaroo	4,000	17,500	438%
Cullen Bullen	400	3,000	750%
Capertee	200	1,000	500%
Rydal	400	2,500	625%

TABLE : HOMESITES

(1) Rural Living Opportunities (1 - 5 ha)

The increase in prices of small rural lots has been the most dramatic of the categories of real estate listed. With the exception of the more isolated settlements of Glen Davis and Capertee which averaged \$10,000 all other blocks were over \$22,000 with opportunities close to Lithgow, Wallerawang and Hartley in highest demand at \$30,000.

(2) Hobby Farms (40 ha approximately)

The dramatic rise in hobby farm values is most obvious in the prestigious Hartley area and areas adjacent to Lithgow. Farms adjacent to Portland, Wallerawang, Meadow Flat, Sunny Corner and Cullen Bullen averaged \$65,000.

(3) Rural Retreats larger than 40 ha, mainly on poor agricultural land

From the Valuer General's figures it appears only poor grazing country is available at prices in any way approaching the cost of a serviced block in Lithgow.

(4) General Grazing Country

One of the effects of the mining and electricity boom in the early 1980's has been to inflate the price of traditional grazing land which benefits those graziers who want to sell but obviously increases the rates of those who wish to remain in the district.

(5) Home Sites

The high cost of homesites in Lithgow must be partly attributable to the limited supply of serviced blocks available in 1981. However, the extremely high developments costs (water, sewerage, electricity roads, telephone) of developing new blocks has meant the new Land Commission homesites at Marrangaroo are costly, \$175 500, the only

bargains in the Shire existing in the older, more remote rural villages. Comparing prices in the two industrial towns, Wallerawang is marginally more expensive than Portland.

7. MAJOR RURAL LAND USES

7.1 Agriculture

As has been indicated previously throughout this Study, the majority of rural lands are either reserved for National Parks and Nature Reserve purposes, State Forests or resource development projects, with what is left being of limited agricultural value.

The extent of agricultural pursuits and their significance to the Lithgow economy have been detailed in Section 4.1. Basically, agricultural land use within the City of Greater Lithgow local government area occupies 40 % of the rural lands.

Soil Conservation and Department of Agriculture maps illustrate graphically the large proportion of land unsuitable even for grazing. The major areas of significant agricultural production have been itemized in detail in a previous section. The major rural land uses are sheep and cattle grazing, occasional cropping for winter feed, and apple orcharding in the Hartley Valley.

7.2 Resource Development Projects

The economic significance of resource development projects has been detailed in Section 4.2.

The major resource development project within the City of Greater Lithgow local government area is coal mining, although projects such as sand mining, clay extraction, quarries for shale, coarse aggregate, dimension stones and sandstone, a small diamond mine and deposits of limestone, magnesite, silica and quartzite are worked throughout the area.

The major coal reserves lie to the north and east of Lithgow City and are mined for domestic and export use. Types of coal include steaming, coking and blending coal with world demand being mainly for steaming coal to be used for power generation. Coal fired power stations have been located at Wallerawang (built) and Mount Piper (to be established) in close proximity to coal sources.

The extent of known and potential coal reserves as indicated by the occurrence of Permian Illawarra Coal measures shows that the Lithgow district is located on probably the most significant seam in the Western Coalfields.

In a paper prepared by Fred Morris, geologist, for the Australasian Institute of Mining and Metallurgy in 1975, the following stratigraphy description is given:

"The Western Coalfield mainly occupies an extensive high-level plateau of resistant Triassic sandstone (Grose sandstone) which is deeply dissected by numerous canyons and steep-sided valleys. The underlying Upper Permian Illawarra Coal Measures are exposed in places along the western edge of the coalfield and at deeper levels of the Wolgan and Capertee Rivers."

The recognized coal seams which traverse the study area are as follows.

The Katoomba Seam, which was previously worked at Hartley Vale, is evident throughout the whole coalfield but is particularly well developed at Newnes Junction and Mount Horne and continues through the Wolgan and Capertee Valleys to Glen Davis.

The Middle River Seam is located west of Newnes Junction and north of Lithgow whilst the Oil-Shale seam, considered the most extensive in Australia, is located in the Glen Davis-Newnes region.

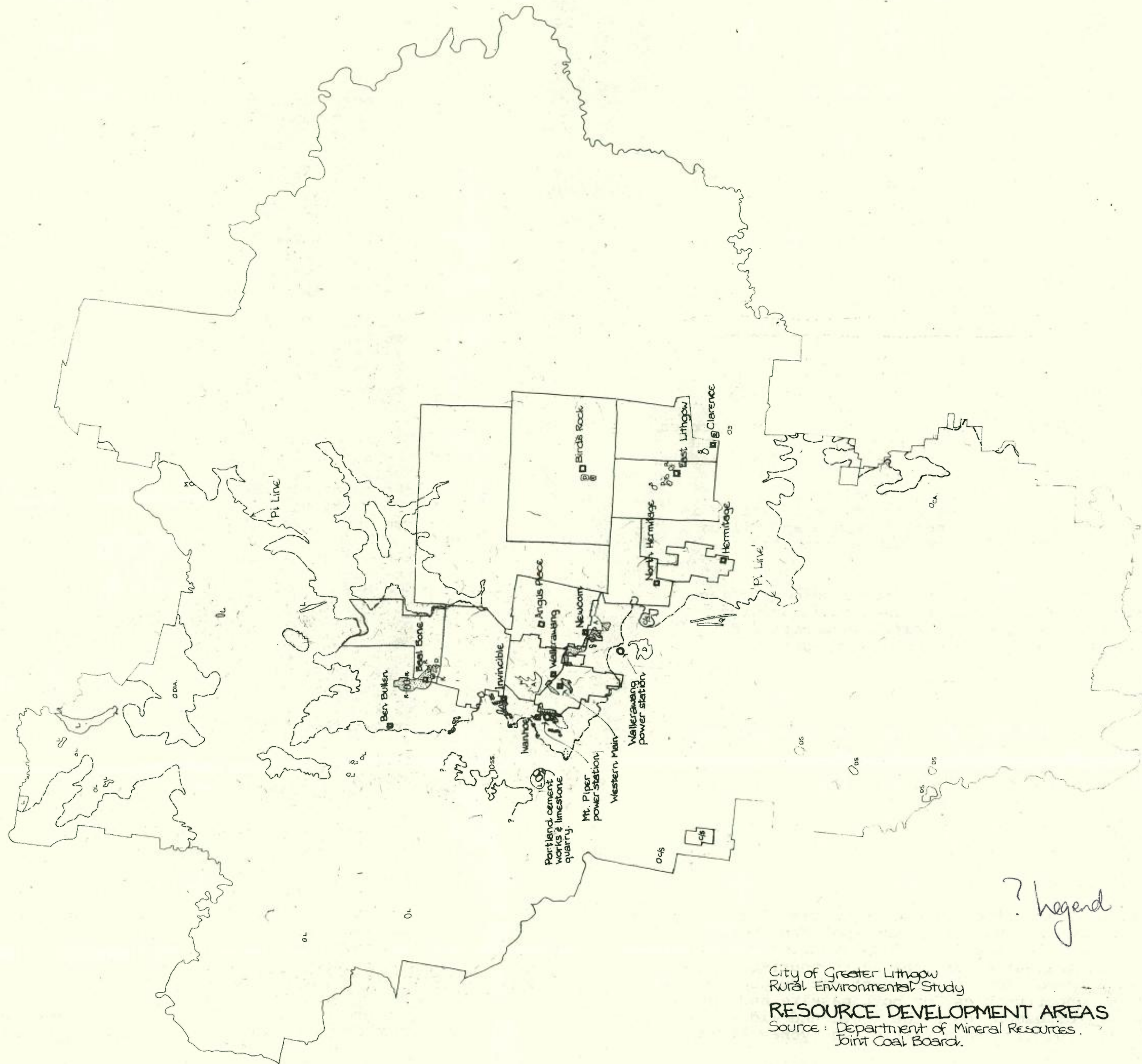
The Wolgan Seam of coking coal is in the Wolgan Valley to the south and east of Newnes extending from Mount Horne in the south to Mount Cameron in the east. Underlying this is the Capertee Seam.

?? The Lidsdale and Lithgow Seams of steaming coal around Lithgow and Lidsdale have both been extensively worked and consequently eroded although the deposits around Baal Bone are soon to be developed.

Known and potential coal deposit areas are indicated on the accompanying map.

Authorisation Licences and Exploration Permits, issued to permit prospecting and exploratory drilling in order to determine the nature of coal reserves, occupy approximately 12% of the Greater Lithgow area. Mining Purposes Leases, taken out by colliery companies to establish mining operations once the economic significance of the coal reserves have been established, are located at Baal Bone, Wolgan, Invincible, Ivanhoe, Wallerawang, Western Main, Hermitage North, Birds Rock Hermitage, East Lithgow and Clarence. The present combined production of these mines is 5 million tons per annum, but it is envisaged that this will expand 3½ times during the 1980's.

Although the establishment of coal fired power stations in the area ensures continued domestic demand for steaming coal the economic viability of the region is dependent on continuing international demand for coal. At present, this is fluctuating due to the drop in oil prices and uncertainty of delivery due to port disruptions.



City of Greater Lithgow
 Rural Environmental Study
RESOURCE DEVELOPMENT AREAS
 Source: Department of Mineral Resources,
 Joint Coal Board.

Of the other minor resource developments in the area, the working of the limestone deposits for use in cement manufacture in the Portland Cement Works is probably the most important. Deposits are at Brogans Creek, McDonalds Hole, Spring Valley, Excelsior, Blue Rocks, Portland and, to a much lesser degree, at Carlos Gap, Cooks Creek, Palmers Oakey and Ben Bullen. Clay and shale are produced at Meadow Flat for use in brick-making at Bathurst. Additional deposits suitable for extraction are located between Lithgow and Ben Bullen, although their exploitation may conflict with coal mining. Coarse aggregate for use in concrete and road base is quarried at Marrangaroo and, to a much lesser extent, near Hartley. Construction sand is obtained from three pits in the Newnes Plateau area near Clarence, whilst small gold and diamond mines, the latter being the only one in the State at present, are located at Airly Mountain. Although there is no current extraction of dimension stone the potential for such exists in the south-western part of the area at Rob Roy Red, Anarel, "Christmas Bush Red" and Old Sodwalls quarries and represent some of the most important sources of "red granite" in the State. Some minor prospecting for magnesite has occurred at Gollainbain although at this stage no production. Quartzite silica is mined at Marrangaroo for metallurgical use, sandstone as a source of silica in cement manufacture is obtained near Portland and Silica Sand with potential for industrial use occurs near Clarence.

Although these non-metallic mineral resource developments play a minor role in comparison to the coal industry, their effects in terms of heavy traffic generation and potential environmental damage must be considered.

7.3 Recreation and Conservation

As has been shown throughout the Study, major rural land-uses within the City of Greater Lithgow local government area include large areas of both recreation and conservation merit.

In many ways recreation and conservation are concomitant, with every item shown on the Tourist Map prepared by Greater Lithgow Council being of either natural or cultural heritage significance.

Tourist preferences are often related to a visual appreciation of historic villages and natural landscapes and the region is seen to be both a continuation of the tourist experience of the Blue Mountains and as an area which tourists drive through on the way west towards Bathurst and Mudgee. A diverse range of opportunities for both passive and active recreation exist for use by both the local and wider communities, particularly those within the Sydney region.

The most significant of the natural areas are the Blue Mountains and Wollemi National Parks. They offer high wilderness recreation value and provide an almost inexhaustive number of varied bushwalking and camping experiences for those attracted by quiet isolation in a natural setting. The parks contain many species of native flora and fauna as well as many items of aboriginal archaeological interest and are under the management control of the National Parks and Wildlife Service. A plan of management for the Wollemi is currently being prepared by the Service to cover access points, fire trails, sign posting, etc.

Pantoneys Crown Nature Reserve to the north of Lithgow, and Winburndale Nature Reserve to the north-west are also managed by the National Parks and Wildlife Service. As well as providing scenic value, the Reserves offer the opportunity for observing an ecosystem and pristine habitat for flora and fauna.

Other natural areas providing recreational value include the Wolgan and Capertee Valleys and Hassans Walls. Whilst offering pleasure driving and scenic value from the road and access into the National Parks, both valleys are in private ownership and exclude the public from camping in serviced areas.

Some recreation facilities are provided at both Newnes in the Wolgan Valley and Glen Davis in the Capertee Valley and both are reached by unsealed access roads. An old hotel is situated at Newnes and the publican permits camping in his grounds and provides basic toilet facilities. Because of the lack of proper management, the area is in poor condition, litter is left by tourists and soil erosion is evident. Recreation activity in the area ranges from group gatherings, industrial site inspection, bushwalking, rock climbing, swimming through to the use of trail bikes and four wheel drive vehicles.

Glen Davis has holiday farm accommodation providing opportunities for bushwalking, horseriding and industrial site inspection of former shale mining operations. Although toilets and picnic facilities are provided, no serviced camping area is present. The need for this is seen by the obvious conflict evidenced by the number of "Keep Out" and "No Trespassing" signs on fences along the Glen Davis road.

Vehicular access is possible to Hassans Walls and a look-out vantage point provides views of Mount Blaxland, Mount Victoria, Mitchells Pass, Blackheath and the Jenolan State Forest.

The Department of Lands is presently attempting to link dispersed Crown Reserves to form a regional parks system to provide a variety of recreational experiences within

natural and semi-natural areas, particularly along waterways. Opportunities for picnicking, swimming and camping with amenities, including toilets, etc., are envisaged and scenic preservation of the hills around Lithgow, the setting of historic Hartley and the escarpment behind Glen Davis is proposed. The Department's historic walking track system in the Mitchells Ridge, Mount York, Hartley Vale area is in keeping with this conservation ethic.

The historic village of Hartley is of regional tourist interest and the National Parks and Wildlife Service is presently preparing a Plan of Management to promote its tourism potential.

Picnic facilities with amenities are located at Zig Zag Reserve, Lidsdale State Forest and Wallerawang Lake, and Greater Lithgow Council is presently undertaking extensive foreshore development of the Lake to create sailing, canoeing and swimming opportunities. Lake Lyell will also provide water activities, including water skiing and fishing. Natural picnic areas without amenities are located at McKanes Falls Road, along the Cox's River, and Londonderry Picnic area in the Hartley Valley and at Sodwalls, Sunny Corner and Tarana.

Recreation facilities within villages include two tennis courts, a sports oval and community hall at Cullen Bullen, a sports oval and disused tennis court at Capertee, show-grounds at Meadow Flat and Rydal and two tennis courts and a cricket pitch at Hampton. Obviously, facilities within the urban areas of Lithgow, Wallerawang and Portland are available to the rural community as well.

Clearly, with the amount and diversity of recreational opportunities available within the Greater Lithgow area, conservation and management considerations are important. The main issues in dealing with the natural areas are protection of the natural and cultural environment, including water catchments, from drainage, e.g. intrusion by development, weed infestation, degradation of archaeological sites, etc. and the control of bush fires. The National Parks and Wildlife Service and the Department of Lands undertake management programmes for lands within their control. Council maintains picnic facilities and amenities and gives support to the fifteen volunteer Bush Fire Brigades within the City of Greater Lithgow through financial donation and by requiring landowners to establish fire breaks.

Any future recreation planning within the study area should be undertaken with a full knowledge of conservation considerations. There is a need for more toilets and picnic areas with garbage disposal to permit passive recreational experiences in pleasant country surroundings. Serviced camping areas would be appropriate at Glen Davis and Newnes which are both used as major access points into and out of the National Parks. This would alleviate conflict

with residents and control refuse left by tourists. It would seem appropriate for the National Parks and Wildlife Service to take over management responsibility for Newnes as an historic area.

7.4 Rural Residential

In order to investigate the changes in small acreage subdivision within the City of Greater Lithgow local government area over the last 10 years, data has been supplied by Council and analysis carried out.

Using the information collected to date, it has been possible to indicate rural lots in the size ranges of 0 - 1.99, 2 - 4.9, 5 - 9.9, 10 - 19.9, 20 - 45 and 45+ hectares that have been created by subdivisions each year for the period 1970 - 1980.

From the accompanying graph and table, which show the subdivision information by total size range, the following comments can be made.

Of the 510 new rural lots created, 290, or almost 56%, occurred in the two year period 1972-73. This demand trend closely parallels the subdivision activity within the Bathurst-Orange Sub-Region, although Greater Lithgow had a consistently higher number of rural lots overall. In comparison to the adjoining local government areas of Bathurst, Blayney, Cabonne, Evans, Oberon and Orange, Greater Lithgow (formerly Blaxland Shire) had the greatest number of lots created for the years 1970-73 and 1975 with the exception of Cabonne in 1970, and Cabonne, Oberon and Orange in 1973.

This trend in the fragmentation of rural lands can be attributed to flow-on effect from the formerly designated Growth Centre creating a demand for rural living opportunities, a downturn in the rural economy and unco-ordinated rural planning policies of the time. These factors, combined with the sophisticated promotional tactics used by real estate agents to entice city dwellers to a 'dream 25 acre block in virgin bush, minimum deposit' cumulatively contributed to the carve up of marginal rural holdings. However, since 1975 major factors which have combined to produce a definite trend in the reduction in fragmentation of rural lands, namely:

- a strengthening rural economy, and
- co-ordination of rural planning policies based on the introduction of the 40 hectare policy.

YEAR	Size Range of Rural Lot (Hectares)						Total
	0-1.99	2-4.9	5-9.9	10-19.9	20-45	45+	
1970	2	4	2	13	1	2	24
1971	7	1	-	12	2	-	22
1972	-	64	8	53	13	4	142
1973	2	23	-	55	66	2	148
1974	1	-	-	-	10	-	11
1975	-	-	21	22	6	-	49
1976	-	-	-	9	-	-	9
1977	2	2	2	5	5	14	30
1978	5	1	1	5	4	3	19
1979	8	2	3	3	8	10	34
1980	6	2	4	1	2	7	22
	33	99	41	180	117	42	510

TABLE : RURAL SUBDIVISION

The major demand in the period shown was for 2 - 4.9 hectare lots in 1972 and 20 - 45 hectare lots in 1973, with the 10 - 19.9 hectare lots showing strong demand over both years. In the more recent period, 1976 to 1980, there was limited subdivision throughout the local government area (105 lots created 1977-1980) with highest proportion occurring in the smallest and largest size range. On average the number of lots produced has been 46 lots per year.

40 hectare subdivisions occurred predominantly along the Capertee Valley, around Glen Davis, to the north of Capertee, the south of Ben Bullen and around Cullen Bullen.

The larger subdivisions of up to 400 hectares have occurred to the north-west of the study area in the vicinity of Palmers Oakey, whilst the smaller, 10 - 20 hectare lots, are dispersed generally throughout the southern sector of the area around Lidsdale, Falnash, and are particularly evident around Sugarloaf Mountain, Kanimbla and Chaplow in the more agriculturally productive parts of the local government area.

The intense small scale rural subdivision which has taken place in the Sunny Corner area has a historic basis. When the area was originally surveyed to create a base-line for titles to enable legal claim to the land, the portions created were extremely small. Since the adoption of the 40 hectare policy, there is no automatic right to develop land when the area is under 40 hectares, although it is legally permissible to sell separate portions. In the Sunny Corner area, many of the portions are already built on and so acquire existing use rights.

In examining the size groupings of the smaller rural subdivisions, it is apparent that the most frequent size range was 10 - 19.9 hectares, with both 2 - 4.9 hectares and 20 - 45 hectares closely following. The least frequent was 0 - 1.99 hectares, with 5 - 9.9 and 45+ showing a slight upturn in 1975.

7.5 Urban Edges

The importance of the "edge" or urban boundary conditions for Lithgow, Portland and Wallerawang in providing both a pleasant setting for the towns and important approach experiences is acknowledged. However, at this stage of the Study investigation of these considerations is awaiting the preparation of a detailed landscape study by the Department of Environment and Planning.

8. CONSTRAINTS

8.1 Introduction

The proceeding sections have been based on very detailed mapping and information which has been provided by various government departments. This data base has allowed the determination of a realistic set of constraints which are cognisant of environmental, structural and financial considerations.

8.2 Land Capability

The land capability assessment provided by the Soil Conservation Service indicates erodibility factors for only private holdings and excludes National Parks, Nature Reserves and State Forests. Land capability, as a constraint, excludes areas of steeper slopes and shallow soils from having potential agricultural quality. These poor quality lands occur in areas surrounding Lithgow (virtually all sides), in the area about the Coxs River and in the southern, northern (between the Wolgan and Capertee Valleys) and north-western (around Palmers Oakey) extremities of the Study Area. These areas should remain in a natural condition, free of any intensive agricultural activity. The rest, i.e. Hartley Valley, Kanimbla Valley, Hampton, Sodwalls-Meadow Flat area, Valley floors of the Wolgan and Capertee Rivers, and areas around Capertee itself are suitable for general grazing.

8.3 Water Supply

The Department of Environment and Planning has identified 5 catchments within the Study Area, 4 of which have direct environmental significance. The Coxs River flows into Warragamba Dam and subsequently contributes to Sydney's water supply, while the Fish River catchment supplies Lithgow, Wallerawang and Portland, plus the villages of Lidsdale, Sodwalls, Cullen Bullen, Rydal and Glen Davis. The Capertee and Wolgan Rivers flow through the Blue Mountains, Wollemi National Parks area and appropriate measures to ensure water quality to maintain the nature value of these areas is a constraint to future development.

The Department of Public Works has indicated that water supply is a critical issue in any future planning for Greater Lithgow and this situation has been exacerbated by the demands of major industrial developments. The present situation is at capacity and with respect to any

short term rural residential development it should be ensured that an independent water supply is provided that is able to deliver volumes at least equivalent, if not greater, than normal urban residential requirements. Any rural planning should reserve options to conserve water supply by not compromising any of the proposed dam sites until decisions have been taken and exact dam sites nominated. The Water Resources Commission has indicated that local flooding occurs in Lithgow along Farmers Creek, in Wallerawang along the Coxs River and Pipers Flat Creek, and in Glen Davis along the Capertee River.

8.4 Nature Conservation

The National Parks and Wildlife Service reservation of the Blue Mountain and Wollemi National Parks and the Pantoneys Crown and Winburndale Nature Reserves for nature conservation should be maintained. The Landscape Study undertaken by the Department of Environment and Planning has identified major areas where vegetation plays a prime soil conservation role. The belts of vegetation are mainly east of the Great Western Highway - Mudgee road alignment with other island pockets being the Winburndale plateau and escarpment and Fish River areas. The area focussing on Pantoneys Crown and the Capertee Valley has been identified as having regional botanical value. Areas affording habitat value are generally in the Newnes State Forest and National Parks areas, although a buffer area which offers medium habitat value is in the vicinity of Pantoneys Crown and west of the Newnes State Forest. The habitat function of some of the naturally vegetated "islands" throughout the western and southern parts of the local government area is unknown. Other areas identified by the Department of Lands as having nature conservation merit include the hills around Lithgow, the escarpment to the south of Glen Davis, and the escarpment and footslopes in the vicinity of Hartley. The National Trust has listed the Wolgan Valley.

8.5 Heritage Conservation

The protection of items of cultural significance and their attendant curtilages which have been identified by the National Trust, the Australian Heritage Commission, and the Heritage Council plus archaeological sites listed by the National Parks and Wildlife Service, place a constraint on future development. The scenic setting for many of the villages, e.g. Hartley and historic routes such as the Zig Zag railway, and Lockyers Road, Lawsons Long Alley and Berghofers Pass, which are under the management of the Department of Lands, are also of heritage conservation merit.

8.6 Agricultural Lands

The productivity capability assessment, as undertaken by the Department of Agriculture, shows that there is virtually no land available for continuous cropping. With the exception of a small pocket of Class 2 land in the vicinity of Glen Davis, which is capable of rotation cropping and pasture improvement, the best lands throughout the area are Class 3. This land is suitable for grazing and is able to be pasture improved and cultivated for an occasional or forage crop. While soil types are not particularly fertile, the high rainfall has resulted in above average levels of productivity for this type of class and activity. Major areas which a rural plan should protect as viable agricultural land are those about Hampton-Sodwalls, the Hartley Valley, the Kamimbla Valley, Mount Lambie-Meadow Flat north to Portland and around Ben Bullen and north of Capertee.

8.7 Resource Development Projects

The Department of Mineral Resources has identified areas of known and potential coal reserves, but the extent of the area north-west of Portland is unknown at this stage. Limestone for use in cement manufacture plus other deposits of clay, shale, coarse aggregate, dimension stone, diamond, silica and workable sandstone are also used throughout the study area. As a constraint, these natural resources should be respected as a source of industrial and employment potential, and their locations be not subject to any planning decisions which would adversely affect prospects for future exploitation (subject to normal environmental controls).

8.8 Finances

Other studies, in particular the "Impact of Mining Developments on the Finances of the City of Greater Lithgow" by Gutteridge, Haskins and Davey, have explored financial implications for the Greater Lithgow area in detail and the policies enunciated within those documents have been accepted for the purposes of this Study. The main implications for public finances as a constraint to be considered in rural planning are the consolidation of new developments in areas able to utilise existing community facilities and infrastructure, and implementation of a "user pays" approach for all land development projects.

8.9 Infrastructure

At present all major roads to varying degrees carry a mixture of industrial, through, local and tourist traffic, with the major problems occurring on the Lithgow, Wallerawang, Portland connections. The prime function of major State and regional roads, including the Great Western Highway, the Bells Line of road, the Mudgee road (TR55), and the road connecting Wallerawang and Portland, is to provide through traffic routes. The minimisation of access onto these roads is seen as a constraint by restricting development along these alignments. Rural roads within the study area are generally of historic alignment and formation and require continual maintenance and upgrading. This is particularly necessary for tourist roads, especially to Glen Davis and Newnes, which experience an increasing level of tourist traffic.

The increasing use of rail for industrial traffic as part of conditions for coal developments and the associated environmental implications, eg noise, dust, etc., places a constraint on the location of any residential development.

The location of servicing infrastructure, i.e. water pipelines, effluent disposal plants and power transmission line routes, should not be impaired by, or cause impairment to, any rural residential development. It is desirable to have residential development close to major water pipelines but away from effluent disposal plants and transmission lines.

8.10 Current Planning Implications and Commitments

Major issues of this constraint are the existing rural subdivision pattern, the nominated release areas, and the current village zones. The proposed industrial lands study will be a further constraint for the future planning of rural areas.

The pattern of rural subdivision to date has been fragmented and ad hoc with the legacy of unco-ordinated rural planning policies, eg excissions, etc., carrying over from administration of the rural areas by the former Blaxland Shire. The 405 rural residential lots shown as created between 1970-1976 are scattered throughout the local government area and their dispersal has created greater maintenance costs for Council. These costs have been exacerbated by there not being any original development contributions required by Council. In recent years the 40 hectare policy has been a major constraint and limited supply of smaller allotments.

The nominated 2(e) and 1(d) release areas for Greater Lithgow have been developed by the Department of Environment and Planning from options proposed in the "Greater Lithgow Environmental Study" prepared by Kinhill Pty. Ltd. The release areas proposed for Lithgow are shown to be twice the original area of the City and are separated from Lithgow by a State highway and railway. Similarly, the areas defined for Wallerawang double the size of the existing urban district and while there is the minor advantage of some new residential development being able to overlook the lake, their location in a basin downhill from a major industry will be subject to inversion problems. Similar comments can apply to Portland, whose focus is the cement works. It would appear that no attempt has been made to tie Lithgow, Wallerawang and Portland together or to determine the interdependence of their infrastructure.

The limited village zonings, and the back-zonings of recent years constrain the development of villages, particularly Rydal, Cullen Bullen and Capertee, with the Department of Lands having a significant number of village holdings. Generally, the existing villages do not provide an attractive level of service - lack of water, etc., or facilities, eg shopping, and the community perception of residents in villages in the northern area appears to differ from those living in the south.

8.11 Speculative Interest

In the past six months development applications to create approximately 700 rural residential allotments have been received by Council. These applicants, together with the landowners in the 1(d) zones can be expected to put increasing pressure on the planning system for the "highest and best use" for their lands. This would create further dispersal and unco-ordinated rural planning and it would seem appropriate to ensure the consolidation of speculative interest within future urban zones.

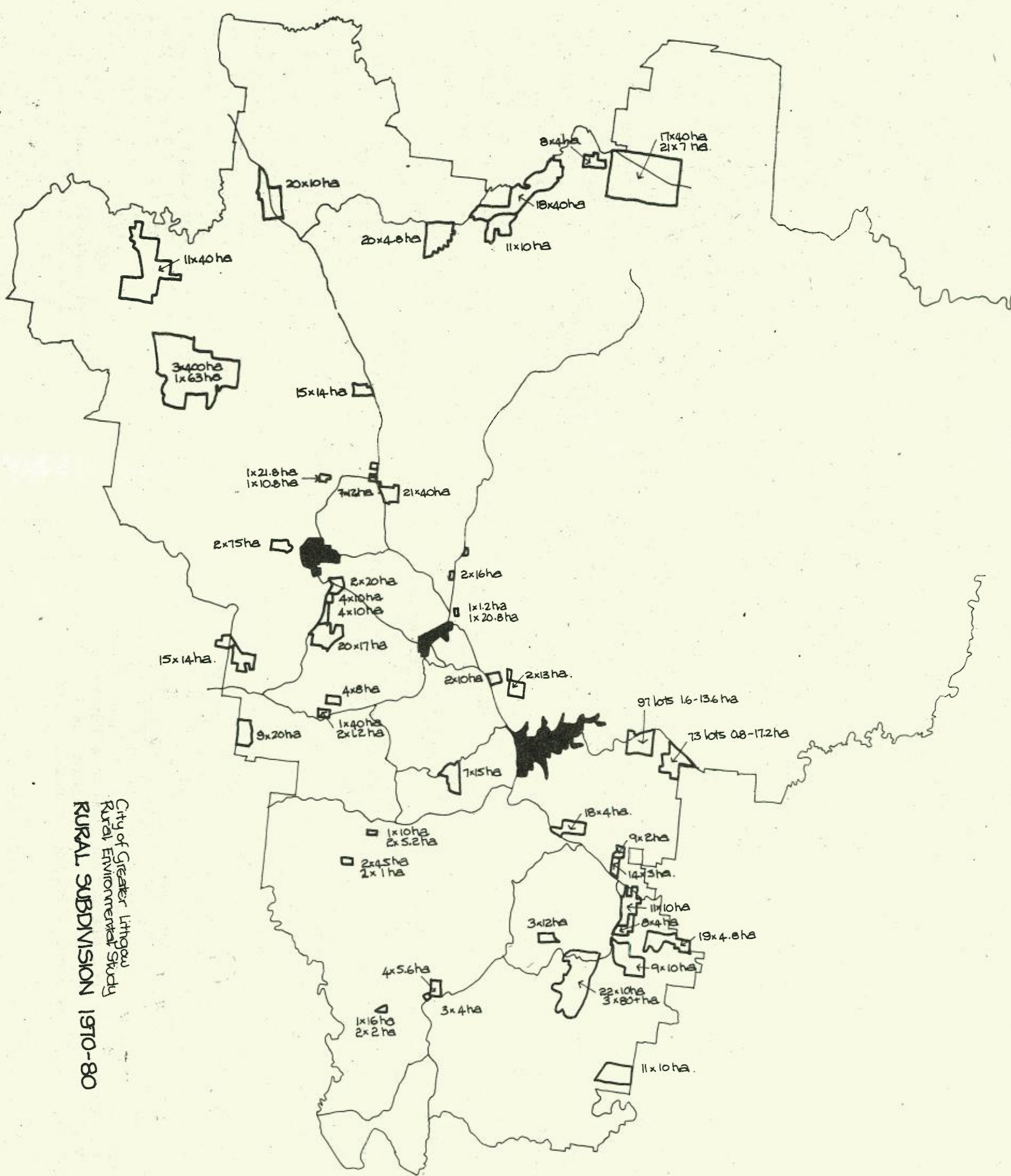
8.12 Rural Subdivision. Supply and Demand

During the course of this study valuable data has been collected by the Greater Lithgow City Council on both subdivision and building activity in the local government area. Further supplementary figures on the fragmentation of rural holdings has been supplied by the Department of Agriculture. The combined data gives a clearer picture of the number, size and location of rural subdivision in the Greater Lithgow area than was previously available. Building activity figures are not as complete but figures made available contribute to an understanding as to where, and how many homes have been erected in rural areas and villages.

In attempting to predict the future demand for rural residential living opportunities in the City of Greater Lithgow it is important to summarize the relevant subdivision and building data available.

- (1) Rural Subdivision 1970-1980 produced 510 lots with a size preference for 10-19.9 hectares (Refer Section 7.4).
- (2) Department of Agriculture research found there were 1613 rural holdings in the City of Greater Lithgow with 1058 lots under 50 hectares.
- (3) Building activity figures have been collected under 2 systems covering different time spans.
 - (a) A field survey of subdivision activity prior to 1976 was carried out to establish the extent of building activity on subdivisions identified on the map Rural Subdivision. This survey was not comprehensive (27 out of 52 subdivisions were covered), but the fieldwork gives a good indication of locational preferences throughout rural areas of the Shire as well as an indication of take-up rates. Facts to emerge were that of rural subdivisions surveyed 40% were built on. This compares favourably with building activity on the large subdivisions at Clarence (98 lots) and Bell (73 lots). These subdivisions took place in the late 1950's along the Bell's Line of Road, with minimum services, and despite their proximity to the Clarence Colliery take up rates have averaged on 30%. In areas of intense subdivision activity in the late 1970's such as the Capertee Valley, of the 93 lots inspected 39 were built on, while in the Cullen Bullen/Ben Bullen area the take up rates were lower - of 41 lots inspected 11 were built on. Meadow Flat emerges in this field survey as an area of high demand - of the 24 lots inspected 16 were built on. A minimal number of subdivisions had occurred in the Hartley Valley. Of these 29 lots 13 had been built on, with a majority built on the Blackmans Creek Road.
 - (b) The other building activity figures are those collected on a local government area basis for the last 5 years 1978-1982. (Refer Section 5.) Of the 505 dwellings erected in the last 5 years 40% have been erected in rural areas, i.e. 174 rural, 30 villages.

These subdivision and building activity figures give a good indication of both the existing supply of rural lots and the current demand for rural living opportunities.



City of Greater Lithgow
 Rural Environmental Study
RURAL SUBDIVISION 1970-80

The general impression to emerge over the last 12 years is one of substantial subdivision in the early 1970's with a lag in building activity, this cycle being reversed in the late 1970's with a lag in subdivision and a catch-up in building activity.

Of more specific importance to this local environmental study for the rural areas of the City of Greater Lithgow are the following trends:-

- (a) The recent very high demand for rural living opportunities.
- (b) The large supply of unbuilt on rural lots at Clarence, Bell, Capertee Valley and Ben Bullen and Cullen Bullen areas, contrasted with the small number of lots available in the more agriculturally productive areas, such as Hartley, Meadow Flat and Hampton.
- (c) The average number of subdivisions from 1970-1980 per year was 50 lots, while the average number of buildings on rural subdivisions from 1978-1982 is 35 per year.

The actual supply of vacant rural blocks is hard to determine accurately. It appears there are certainly more than 200 lots available, which is the figure from the following simplistic equation.

Subdivision 1970-1980	510
<u>Less</u> building activity 1978-1982	174
<u>Less</u> assumed building activity 1970-1977	<u>126</u>
<u>EQUALS:</u>	<u>200</u>

These figures merely give a contemporary perspective on rural subdivision and does not acknowledge the recent Department of Agriculture research which suggests an historical legacy of small acre subdivision in the Greater Lithgow area. The supply side of the rural subdivision equation is also complicated by the fact that "statistically" vacant blocks may be 'very well held' or in the wrong location.

It is for these reasons that the steering committee of this study has directed the consultants "to be more concerned with issues of location, access, services and the environment than with the actual upper limit of supply of rural residential lots".

The demand side of the rural subdivision equation is even more complex because of the dramatic fluctuations in the economic future of the region. The deferral of major projects such as the Mount Piper Power Station and the Birds Rock Colliery, combined with the deferral of other resource works has led to the present reassessment by the Department of Environment and Planning of population projections, made in 1981. The recommended estimate of population growth for Greater Lithgow 1980-2001 as quoted in the Kinhill Study was:

1981	-	21,000
1985	-	26,800
1990	-	31,250
2001	-	35,000

Preliminary investigations carried out recently by Department demographers suggest that the new population estimates for the year 2000 will be 4-5,000 less than predicted.

This very large reversal in population predictions illustrates the excruciating task facing demographers in times of sudden economic recession.

A more realistic and practical approach to measuring the demand for rural living opportunities in the City of Greater Lithgow is to assume that the 1970's slump/boom conditions will be repeated in the 1980's and that an annual provision of approximately 50 lots a year (subject to take-up rates) in attractive accessible locations, combined with rural homesites (Refer Section 10) and low cost blocks in rural villages will over a ten year period meet fluctuating demand as it arises.

9. OPPORTUNITIES

9.1 Introduction

This section discusses opportunities for co-ordinated planning for rural areas within the City of Greater Lithgow local government area. It focuses on methods to ensure that a viable economic base is maintained and includes investigation of opportunities for environmental protection, continued agricultural viability, resource development, tourism, utilisation of existing infrastructure, resolution of certain transport problems and the provision of new rural living opportunities.

9.2 Environmental Protection

The reservation of areas for National Parks and Nature Reserves which are of State and regional significance offers major opportunities for environmental protection.

State Forests, whilst acknowledging their increasing importance to the economic base of Lithgow, need to be viewed as an environmental concern with investigation such as has been undertaken by the Forestry Commission in their recent Draft Plan of Management for the area.

Other areas affording opportunities for environmental protection include the Wolgan and Capertee Valleys and areas identified as distinct landscape units by Rodger Bartlett in his Landscape Study. These include the area east of Hampton and Lowther, the escarpment marking the change between tableland and plateau landforms (especially the hills on the north side of the Lithgow Valley and the area surrounding the Hartley Valley), the distinct upland area associated with Sunny Corner running into the Turon, and Mount Airly State Forest, as part of the Great Dividing Range. Opportunities exist for these areas to have appropriate environmental protection zoning to maintain scenic and environmental qualities for heritage and recreational purposes. It is far more appropriate to apply scenic and environmental protection zones to Crown land rather than freehold property. Any change in status of land for farmers can cause extreme political reaction and be environmentally counter-productive.

Whilst acknowledging that the heritage value of natural areas listed above should be protected, conservation of certain items of the cultural environment also offer major opportunities for the attainment of social and economic benefits. These include the industrial ruins at Glen Davis and Newnes, Hartley historic village and scenic setting, the

environmental and historic qualities of the villages, eg Meadow Flat public school (1882), gold diggings at Capertee, etc., the Zig Zag railway, the historic routes as defined by the Department of Lands, and certain other engineering items, such as the stone rail viaduct at Marrangaroo and simple timber bridges on country roads. The protection of archaeological sites is a statutory requirement.

9.3 Agriculture and Forestry

Opportunities exist to keep all viable agricultural land in production, thereby maintaining additional employment and economic options to resource-based development. Areas favourable to intensive farming related to an urban life-style exist within the study area, eg Hartley Valley. It is also possible for State Forests to make a viable contribution to the economic base of Lithgow and, at the same time, provide a range of outdoor recreational opportunities.

9.4 Resource Development

Coalmining is the major contributor to the economic base of the City of Greater Lithgow and, therefore, subject to adequate environmental controls, the area of known and potential coal reserves outside the National Parks should be reserved for possible future mining. Opportunities for any above ground industrial development related to coal production should occur within the Lithgow-Wallerawang-Portland area which is already subject to extensive colliery, power generating and cement manufacturing operations.

9.5 Tourism

Tourism provides another opportunity for economic stability and growth for the City of Greater Lithgow. Conservation opportunities previously expressed for items of both natural and heritage significance are particularly important with respect to opportunities for tourism. Care should be taken in preserving, wherever possible, the "countryside qualities" for the tourist when driving along major State and regional roads.

National Parks, State Forests and recreation reserves which have ensued from the initiatives of the Department of Lands in holding lands for conservation, recreation and landscape purposes, provide enormous opportunities for outdoor recreation. Certain key locations, eg Newnes and Glen Davis will require special management to function as tourist centres in these areas.

9.6 Infrastructure

Opportunities exist to connect into existing water, power and road networks and utilise existing community facilities and services within rural areas and villages, eg Capertee.

9.7 Transport

Opportunities exist to develop a hierarchy of roads to attempt to separate industrial and other types of traffic and, in particular, to link Lithgow, Wallerawang and Portland with a route that excludes local industrial traffic.

9.8 Development Opportunities

(i) Existing Rural Subdivision

The opportunity to build on 200 existing lots and existing portions in Sunny Corner is available.

(ii) Rural Residential

There are major opportunities to create co-ordinated rural residential development (with commonage) within the 1(d) future urban areas defined by the Department of Environment and Planning. However, these should be subject to detailed investigation and occur in a fashion that allows future smaller scale subdivision to occur.

(iii) Special Opportunities for Rural Living

Special opportunities could be developed in an area immediate to major urban areas. These would be provided in a co-ordinated manner to offer a diverse range of residential opportunities, with the whole development ideally being constructed around some purpose or theme related to agriculture and rural lifestyles. It is suggested that one such area for immediate investigation would be the Hartley Valley. In general, because of the existing stock and because of other opportunities that can be provided in a better manner, it is recommended that there be no future multi-lot subdivisions carried out in an ad hoc manner throughout the local government area.

(iv) Rural Homesites

The opportunity exists to create within the planning system an equitable method which permits Greater Lithgow residents the right to select an isolated homesite within those parts of the Greater Lithgow rural area that are not of high environmental or economic significance. This

system basically would permit new residents the right to barter in the market place for an allotment of unspecified size directly with the existing property owner. This opportunity would only be available at a rate that insured that the homesites were dispersed and would be subject to stringent design and siting criteria. These criteria would be augmented by hefty financial bonding to ensure that the property would be built on in the manner prescribed under the planning instrument.

(v) Villages

Opportunities are present to make use of existing village structures and their facilities wherever possible.

*Cullen Bullen - The local community is amenable to future residential development. Although hemmed in by State Forests on the north and east, opportunities to expand towards the south-west exist and with special planning, could ameliorate the occurrence of heavy traffic through the residential areas. The only industrial traffic that this village will suffer from the longer term is that emanating from the Baal Bone and Ben Bullen collieries. Consideration should be given to methods of improving the environmental amenity of the village, such as landscaping, removal of dump sites, etc.

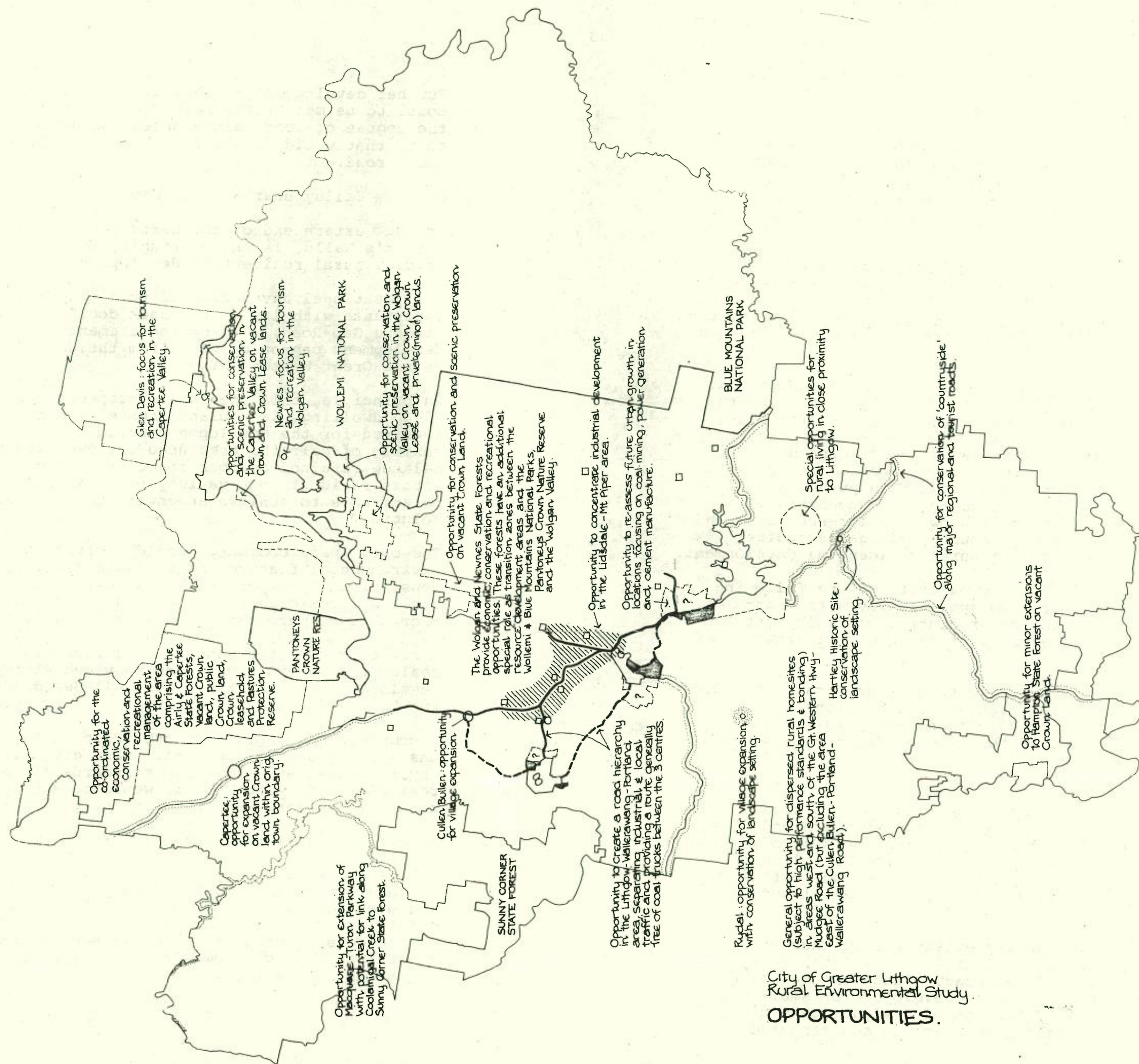
*Capertee - Opportunities exist to permit larger rural residential development within a village environment on Department of Lands holdings. This would be subject to the provision of a local water supply and effluent disposal system. The provision of a common water supply such as site dams would need to be investigated.

*Rydal - The environmental quality of the village and its proximity to Wallerawang along with the availability of a reticulated water supply provides opportunities for further residential development.

*Hampton, Sodwalls, Meadow Flat and Little Hartley - Existing functions as local rural amenity centres should be retained and their active expansion should not be encouraged.

(vi) Structural Adjustments

Opportunities exist for a reassessment of the 1(d) future urban areas recently identified by the Department of Environment and Planning and Greater Lithgow Council. This reassessment should give attention to the desirability of long term future urban growth in these particular locations, which focus on cement manufacture and power generation and their attendant environmental problems.



Glen Davis: focus for tourism and recreation in the Capertee Valley

Opportunities for conservation and scenic preservation in the Capertee Valley on vacant Crown and Private Lease lands.

Newnes: focus for tourism and recreation in the Wolgan Valley

WOLLEMI NATIONAL PARK

Opportunity for conservation and scenic preservation in the Wolgan Valley on vacant Crown, Lease and Private (minor) lands.

Opportunity for conservation and scenic preservation on vacant Crown Land.

The Wolgan and Newnes State Forests provide economic, conservation and recreational opportunities. These forests have an additional special role as transition zones between the resource development areas and the Wollemi & Blue Mountains National Parks, Pantoneys Crown Nature Reserve and the Wolgan Valley.

Opportunity to concentrate industrial development in the Liddale - Mt Piper area.

Opportunity to re-assess future urban growth in locations focusing on coal mining, power generation and cement manufacture.

BLUE MOUNTAINS NATIONAL PARK

Special opportunities for rural living in close proximity to Lithgow.

Opportunity for conservation of 'countryside' along major regional and tourist roads.

Opportunity for the co-ordinated economic, conservation and recreational management of the area comprising the Airdy & Capertee State Forests, vacant Crown land, public Crown land, Crown leasehold and Pastures and Pastures Protection Reserve.

PANTONEYS CROWN NATURE RESERVE

Capertee: opportunity for expansion on vacant Crown land within original town boundary.

Opportunity for extension of Murrumbidgee - Turon Parkway with potential for link along Coolahingal Creek to Sunny Corner State Forest.

Cullen Bullen: opportunity for village expansion.

SUNNY CORNER STATE FOREST

Opportunity to create a road hierarchy in the Lithgow-Wallerawang - Portland area, separating industrial & local traffic and providing a route generally free of coal trucks between the 3 centres.

Rydal: opportunity for village expansion with conservation of landscape setting.

General opportunity for dispersed rural homesites (subject to high performance standards & bonding) in areas west and south of the Gt. Western Hwy - Mudgee Road (but excluding the area east of the Cullen Bullen - Portland - Wallerawang Road).

Hartley Historic Site: conservation of landscape setting.

Opportunity for minor extensions to Hampton State Forest on vacant Crown Land.

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OPPORTUNITIES.

10. RURAL RESIDENTIAL OPTIONS

The options for rural living opportunities presented in this section have been derived from consideration of environmental, economic, social, tenure and land use information previously collected and assessed as constraints and opportunities to rural planning within Greater Lithgow.

In determining the range of appropriate options, a decision was taken that, while recognising the value of the Department of Agriculture's very detailed agricultural assessment, this report does not support the recommendation that Rural 1 (c) zonings be preferably located on Class 5 land.

The planning reasons for this diverging opinion are that much of the Class 5 land has also been identified by the Soil Conservation Service as Category VII or VIII land, that is very steep land with high erodability potential and therefore unsuitable for development. In addition, much of the Class 5 land is of considerable scenic and nature conservation value and has a high bushfire hazard level. Finally, it has been adequately demonstrated within the City of Greater Lithgow (at Clarence, Bell and Cox's River Road) that poor country mitigates against achieving a high standard of rural residential development.

With respect to location, the majority of the following options have been identified specifically with regard to their convenience to the major centres of employment and community facilities/services at Lithgow, Wallerawang and Portland.

In the light of the above, and to provide a range of rural living opportunities in a variety of locations, the following rural residential options are possibilities within the rural areas of the city of Greater Lithgow.

10.1 Cox's River Road

Considerable subdivision has occurred in this area already. Subdivision of undulating land at the northern end of this road (eastern side only) has in general been successful with a character of small acreage subdivision established. Existing subdivision of steeper lands further out has not been successful with significant environmental and management problems resulting.

Accordingly, the opportunity exists for further small acreage subdivision (approximately 10 ha lots) on the eastern side of Cox's River Road. Lands on the western side of the road should not be developed for small acreage subdivision to enable retention of a significant area of unmodified natural vegetation which is not repeated in the Cox's Valley.

Further development in this area would require all servicing costs to be met by the developer. Council should investigate the degree of road maintenance (and associated drainage) costs that would result from higher traffic volumes on this local road.

10.2 Hartley Valley near Brown's Gap

At the western end of the Hartley Valley, sheltering beneath Hassan's Walls, is an opportunity for the development of a special rural residential development.

The locational advantages of this option are of principal importance with its short "back door" entrance to Lithgow via the Gap Road. Siting requirements should ensure that development cannot be seen from the Hartley Historic Site or the Great Western Highway.

In principle, this special development would comprise some 25-30 dwellings in a planned estate. The minimum total area required for the development would be 100 hectares, with a maximum of half the area used for dwelling sites and the balance retained as open space for the common use of all estate residents. A variety of individual lot sizes may be suitable to achieve an environmentally sensitive design solution.

The open space commonage would be located according to the environmental features of the site (e.g. to protect ridge tops, visually important hillsides, natural drainage lines, etc.) and could be used for a variety of agricultural and recreational purposes by the residents of the estate.

A reticulated water supply, electricity, telephone and sealed road would have to be provided at full cost by the developer. Construction of a well-designed entrance to the Gap Road would be required.

A complete Development Control Plan would be required as the basis for planning approval. And given the high locational environmental and servicing standards of this type of rural residential development, it would be appropriate for a normal urban rate structure to apply.

10.3 Bowenfels - Farmers Creek

This area is basically an extension of the City of Lithgow on the western side of the Great Western Highway, and includes land on both sides of Farmers Creek, but not extending beyond the Sodwalls/Rydal Road (this would assist in the conservation of the environmental and heritage significance of Old Bowenfels and maintain a high standard of entrance to the City.)

The form of development suggested for this area is for clustered estates with commonage - a type of development able to establish an urban edge to Lithgow's open end, provide direct access to urban employment and facilities, utilise (with minor augmentation) existing urban services, and provide suitable land (at some unknown future date) for urban expansion.

It is essential in this location that a high level of servicing be provided. In this respect the clustering of development is advantageous, with the areas for development located in areas able to be serviced with minor extensions to existing urban services.

The combination of location and servicing characteristics will provide the opportunity for these estates to be further subdivided at some future date to provide additional urban land. In the meantime, with proper site planning, these estates can provide semi-rural living qualities based on informal (but structured) development, privacy and enjoyment of rural views.

Detailed Development Control Plan(s) would be required as the basis for planning approval. Guidelines for the preparation of these plans would include the following:

- for the total site, half the area would be used for dwelling sites, the other half for open space commonage.
- average size of dwelling site: 1.0 hectares. However, it is recommended that a variety of design and siting configurations may be suitable based on sensitive development of a particular site. In this respect, 1.0 hectare lot sizes would not be mandatory, thus permitting such development as grouped housing, but the total number of dwellings would be determined on the 1.0 hectare ratio (for half the total area of the site) with the unused site residual incorporated into the estate common.
- The open space commonage would be located according to the environmental features of the site (e.g. to protect ridge tops, visually important hillsides, natural drainage lines, etc.) and to provide an open space edge to the City. This commonage could then be used for a variety of agricultural and recreational purposes by the residents of the estate. Consideration should be given to the permanent reservation of land along both sides of Farmers Creek.
- A reticulated urban water supply, electricity, telephone and sealed (but not necessarily kerbed) road would have to be provided at full cost by the developer. In addition, subdivision design should permit the possible future urban use of the site, and in this respect easements for sewerage and drainage should be provided.

Finally, given the high locational, environmental and servicing standards of this type of rural residential development, it is strongly recommended that a normal urban rate would be appropriate.

10.4 Rydal

In addition to providing opportunities to live in the village of Rydal (see later section), the location of this area and its rural/agricultural qualities provide the opportunity for small acreage subdivision.

Situated some 8 kms from Wallerawang, with the potential for utilising the Oberon Dam water supply line, this area could provide small acreage rural living opportunities. Lot sizes would average 10 hectares, thus providing the opportunity for hobby farming or intensive (second income) agriculture. It is considered that some 50 opportunities could be provided in this area without detrimental impact.

Together with the Cox's River Road area and the 'rural homesites', this option provides for an allotment size that would permit limited farming and on-site recreation opportunities.

10.5 Mount Lambie

The Mount Lambie area is well located with respect to the towns of Portland and Wallerawang. It is also some of the best agricultural land in the local government area, with a high environmental quality resulting from this fact and its location on the Great Dividing Range.

The opportunity exists for the development of special estates that would take advantage of the locational and environmental qualities of the area without alienating agricultural land or being visually intrusive (especially with respect to the Great Western Highway - a major tourist route).

It is suggested that a maximum 25-30 opportunities - preferably spread over 2 or 3 estates - be provided in the Mount Lambie area. Again this special form of development would repeat the form and intentions of Option 2 (Hartley Valley near Browns Gap) but with an increased average lot requirement of 2 hectares per dwelling with a further 2 hectares for each dwelling available as commonage. Accordingly, an estate of 25 dwellings would require an area of 100 hectares with at least half this area available as open space commonage for recreational and agricultural use. All servicing and development costs would be met by the developer.

The suggested location for these estates is the Meadow Flat - Portland back road or other locations without direct frontage to the Great Western Highway. The construction of new access roads to the Highway from these estates would not be permitted. Again, an urban-type rate would be appropriate.

10.6 Sunny Corner

A number of small acreage existing portions are found near Sunny Corner - a seemingly isolated yet accessible quiet rural location some 10 kms from Portland.

An opportunity exists to consider the granting of development rights to some of these existing portions.

However detailed examination would be required to ensure that those portions receiving development rights are capable of efficient servicing and maintenance.

To achieve this, a detailed study would be required to examine the physical lay-out of the portions, the type of land involved, access to the various portions, the availability of power, and the potential for any engineering problems (e.g. drainage) that could be a major ongoing maintenance item for Council if overlooked. The attitudes of the local resident community should also be sought.

10.7 Village Opportunities

The opportunity exists for additional rural living opportunities to be provided either within or in close proximity to a number of villages within the City of Greater Lithgow.

In particular, the following villages have been identified as viable options:

- (i) Cullen Bullen: expansion of the village is possible in the south-western sector. A reticulated supply is available (from the Fish River System) and detailed planning could avoid the only problem of industrial traffic (from the Baal Bone and Ben Bullen collieries). The village is well located with respect to resource development projects in the Wallerawang-Portland area and their attendant employment opportunities.
- (ii) Capertee: subject to the provision of a local water supply and efficient effluent disposal, the opportunity exists to permit larger residential allotments within a village environment on lands held by the Department of Lands.
- (iii) Rydal: the environmental quality of the village and its proximity to Wallerawang, along with the availability of a reticulated water supply, and a larger "surveyed" village area provides the opportunity for further residential development. Special detailed study considering soil stability, road alignment (existing and future possible), water reticulation and title arrangements for existing portions should be carried out to determine an extended village zone.

It should be noted that the small settlements of Hampton, Sodwalls, Meadow Flat and Little Hartley should retain their existing local amenity functions without active encouragement for expansion.

10.8 Rural Homesites

Another rural residential option is the rural homesite, a one-off dispersed opportunity to live in the countryside.

The proposal for rural homesites is based upon strong preferences by the rural residential community to live in the countryside, and not be concentrated in small acreage subdivisions, the flexibility for the purchaser to determine the size and function (farming or non-farming) of his holding, and the retention of general farming areas in agricultural production by permitting small excisions rather than forcing large allotments that when not farmed result in large areas being taken out of production.

Rural homesites would be excluded from special rural and environmental protection zones and could only be located in the general rural zone.

The rural homesite provides either a farming or non-farming opportunity for any size allotment (subject to negotiation between vendor and purchaser) to be excised from rural properties at the ratio of one opportunity per 100 hectares. The remainder of the 100 hectares not required by the rural homesite purchaser would have to be consolidated with the original property and could not be used in calculations to determine future rural homesite subdivisions. A Register of these subdivisions to be kept by Local Councils would be mandatory.

This approach to the provision of rural homesites acknowledges the problem as being not one of subdivision, but one directly related to the design and siting of buildings in rural landscapes. Accordingly, a number of stringent controls would be needed for this type of development, including:

- * The siting of any dwelling at least 400 metres from any road, or if local conditions were suitable, within 400 metres but not visible from the road at any point.
- * Restrictions on the location of dwellings on ridges and hilltops, close to rivers and streams or in close proximity to natural features, with the generalised attitude that the dwelling not be visually intrusive in the countryside.
- * That access be provided direct to existing public roads or if this is not possible then via private right-of-ways, thus avoiding the maintenance by local government of more public roads.

- * That the location, form and materials for dwelling construction be prescribed by reference to Design and Siting Guidelines - yet to be prepared but similar in intent to Technical Bulletin II : Guidelines for Siting Rural Dwellings in Coastal Areas.
- * Bonds to be held for the landscaping of a rural homesite in accordance with the Design and Siting Guidelines.
- * The cost for the provision of all services to be met in full by the developer and formal recognition (in writing) by the subdivider and purchaser to the non-availability in perpetuity of reticulated water and sewerage systems. All water supply would have to be from the rural home site or by private arrangement with adjoining landowners.
- * The special rating of a rural homesite would be generally equivalent to an urban rate for a detached dwelling.
- * Large building bonds to be held by Local Government to ensure adherence to Design and Siting Guidelines but more importantly to avoid speculative subdivision without building on these special allotments.

The rural homesite option has been developed to provide equity in the provision of rural living opportunities. While strict controls regulate the end product and its impact on rural areas, perhaps the main feature of the option is its free-market character requiring the vendor and purchaser having to resolve settlement problems, while the whole operation can be achieved without any real loss of agricultural land.

10.9 Future Urban Areas

Areas for future urban development around Lithgow, Wallerawang and Portland have previously been identified. Recent demand trends and the environmental quality of these locations have resulted in some concern as to the appropriateness of this designation. Accordingly the concept of "future urban" areas has been reviewed and decisions "deferred".

As an interim measure, lands identified as "future urban" immediately west of Wallerawang and on the western side of the highway at Lithgow could be suitable for special clustered estate development with commonage as spelt out in Option 3. As established in the guidelines, these estates would be capable of consolidation to urban densities when and as required.

11. RURAL PLANNING STRATEGY

11.1 Looking Beyond Lithgow

For better or for worse, the City of Greater Lithgow has unavoidable responsibilities of State, even national, dimension which derive from the economic and environmental wealth of the area.

The majority of the western coalfield is located within Greater Lithgow and produces some 10 per cent of the State's total coal production - impressive in its own right as a major export earner, but amplified by its growing association with electric power generation projects - State facilities of prime importance. These industrialised processes (and their attendant transport and servicing requirements) are not of local significance, but belong to State and national levels through their direct economic contribution to an industrialised society dependant on plentiful and cheap (as possible) energy. The responsibility of Greater Lithgow is to ensure the economic and efficient delivery of these resources to the state and the nation. Accordingly, local planning strategies can only provide workable logistical frameworks that ensure this economic and efficient delivery with the real challenge being to capitalise on these responsibilities for local benefit while avoiding conflict.

Similarly, although at opposite ends of the land-use planning spectrum (and hence in potential conflict), the environmental wealth of the area is a major state asset of numerous dimensions, including nature conservation, Aboriginal sites, historic routes, built heritage, industrial archaeology and scenic landscapes. The value of this environmental asset is yet to be widely acknowledged but its complexity and richness, together with its location generally less than 100 km from a population of 3 million must result in an environmental significance of state (and in parts, national) dimension. Of particular importance are the areas of national park within Greater Lithgow which are a major part of the State's largest park system, comprising the Kanangra Boyd, Blue Mountains, Wollemi and Goulburn River National Parks.

To look beyond Lithgow is to see a major challenge to consolidate and develop a major economic resource of the State while conserving and presenting a complex, large scale, environmental heritage.

11.2 A Local Overview

A growing economy with a tradition of boom and bust - can it happen again? It can. Austen and Butta announce a 69.1 per cent slump in profit (3 March 1982) yet announce \$2,000,000 profit for the six months to 31 December, 1982. Birds Rock postponed. World oil prices drop. Mt. Piper postponed. What next. What's needed?

A more diversified economy will cushion changes in fortune - to a limited degree. Obviously power generation provides an important degree of local stability and should be encouraged - happily the trade offs appear to have been resolved in this instance without incurring the degree of sacrificial loss of environmental quality currently instanced for a power project in a smaller island state. Other avenues include agriculture (cattle, wool and sheep commodity values total \$6,100,000 for 1979-80), forestry (Bathurst Forestry District Expenditure 1980-81 of \$3,500,000) and tourism (value largely unknown due to its embryonic nature). But how to compare this against raw coal production of 7,200,000 tonnes in 1981/82.

Obviously, it can't be compared and even with a stabilising power generation industry, fluctuations in the fortunes of coal production will be felt. Encourage economic diversification - tourism, forestry, agriculture, etc. - but be realistic and don't forget.

How then to achieve flexibility to ride out the ups and downs. One way is to not follow economic growth flushes with capital intensive urban development programmes for new release areas - ask Landcom about Marrangaroo. (At the same time the fiercely loyal longer-term residents of Portland, Wallerawang and Lithgow do deserve an adequate water supply.)

But where will new residents live? In the towns, through consolidation and sensible minor extensions, and in the countryside.

Consider the following - in the last five years, Greater Lithgow City Council received 500 building applications - 200 of these were located in the rural areas, indicating a heavy 40 per cent preference (and hence real demand) for rural living. And it didn't involve large public expenditure on new infrastructure and services.

Assimilation of a significant percentage of new residents into the rural areas thus avoids heavy up-front public capital expenditure while providing sought-after living experiences. And the trade-offs involved can be minimal, with new techniques to provide rural living opportunities (see later sections) not requiring any public contributions - the user pays - or taking significant amounts of agricultural land out of production (190,000 hectares produced \$6,100,000 worth of cattle, wool and sheep in 1979-80, while say 400 rural living opportunities would require approximately 2,000 hectares - resulting in a one per cent drop in commodity values to \$6,039,000 - NOTE this is an illustrative and simplistic case.)

In any event, the provision of rural living opportunities takes the heat off the public purse, gives a significant percentage of the new population a sought after living experience, and does not really effect the agricultural

contribution to the economic base of the area, after all \$61,000 does not compare with 7,200,000 tonnes of coal or public holding charges on a 400 lot residential subdivision (say \$10,000 per lot over 2 years at 10% interest = \$800,000).

The overview - don't spend masses of public money on expensive infrastructure that may or may not be required - and to a large degree give new residents what they want (at their expense) and the opportunity to agrierian-ise during economic downturns.

11.3 Resource Development Projects

Resource development projects must, can and will happen, and are largely beyond local planning control, being a state responsibility.

The simplified key to resource development projects is the noted "Pi line", the line where the Permian Illawarra coal seam that extends beneath the Sydney Basin surfaces at the edges. In Greater Lithgow thus far, most collieries have been located above the Pi line in a resource-development crescent extending from Clarence to Ben Bullen with most pit tops occurring within the Cox's River Catchment.

The strategy for the rural areas of Greater Lithgow with respect to resource development projects acknowledges the major economic contribution of coal mining and its associated power generation projects. Accordingly competing land uses in areas of known coal reserves which could pre-empt mining or associated activities will not be permitted. In particular the Portland - Mt. Piper - Lidsdale - Angus Place area will be considered as a resource/ industrial development area.

However, depletion of reserves within the current lease areas will result in a general easterly push by mining companies seeking new leases and access points to the deeper coal seams.

This will bring into conflict mining and conservation interests, both of which are intrinsically state government responsibilities.

Given the immediate and continuing nature conservation values of the Newnes Plateau and National Park areas as an irreplaceable resource as against the short-term once-off value of coal mining, this local planning strategy will seek to establish a priority for nature conservation if and when jeopardised by resource development activity. (Please refer next section.)

Accordingly, and while this study acknowledges that subsidence issues are beyond its competence, the challenge will be for the mining industry to develop new technologies and procedures that permit mining activity without impact

on the natural environment, especially with regard to catchment areas and water quality.

11.4 Environmental Protection

The strategy relating to environmental protection is concerned with nature conservation, Aboriginal sites, historic routes, built heritage, industrial archaeology and scenic landscapes.

The major concern of the strategy is however protection of the natural environmental qualities of the Blue Mountains and Wollemi National Parks and their adjacent and related areas. In this respect, a simplified catchment analysis of the five river systems originating within Greater Lithgow, shows the strategic approach.

The Wolgan and Capertee Catchments directly relate to the existing National Park network. The problem has been that development within the Catchment, but outside the park, has had considerable impact on the nature conservation values of the park, e.g. colliery and sand mining at Clarence, and their effect on the Wollangambe River. Similar future problems could be expected to arise if coal mining (as per current methods) were carried out in the Wolgan and Capertee Valleys. Accordingly, any development proposals within the Capertee and Wolgan Catchments will need to demonstrate a proven ability to prevent all pollution and despoilation of the immediate area and adjacent National Parks and Nature Reserves. A similar approach will apply for the Turon River Catchment, and to a lesser degree for the Fish River Catchment.

The Cox's River Catchment will be the "sacrificial" catchment within Greater Lithgow. This catchment already includes the majority of colliery developments and industrial development areas. In this respect Lake Lyell could be considered to act as a settling and detention pond for the majority of potential urban and industrial run-off in the local government area. A neighbourly gesture will include support for the re-location of the Grose Valley Colliery within the Lett River Catchment (a tributary of Cox's River).

The crossing of the Blue Mountains, a major event in the European development of New South Wales, and historic routes into the Hartley Valley (Lawsons Long Alley, Lockyer's Road, Mt. York Road and Berghofers Pass) require appropriate recognition, as does the Zig Zag Railway - an engineering feat of 1869.

The environmental protection strategy also includes acknowledgement of the many and varied items of the built heritage within Greater Lithgow. These include the settlements of Hartley and Old Bowenfels (including their setting in the landscape), while the industrial archaeological importance of the Newnes, Glen Davis and Airly-Torbane shale oil plants is also acknowledged and included.

In particular the Survey of Industrial Sites and Buildings in the Greater Lithgow Area undertaken by the Heritage Council in 1982 identifies individual elements of heritage significance in considerable detail. While no final recommendations have been formulated this acknowledges the significance of these items.

The delineation of scenic landscapes is perhaps the most subjective element of an environmental protection strategy. However, the area is one of considerable scenic value (as identified by Rodger Bartlett) and is an issue which cannot be avoided. Accordingly, a number of areas have been identified as major scenic components. These comprise the Wolgan, Capertee and Hartley Valleys (as complete landscape units including escarpments), the Newnes Plateau, the Cox's, Turon and Fish River corridors, and the Hampton and Bell ridges. Scenic areas within National Parks have not been included.

11.5 Agriculture

The agricultural strategy for Greater Lithgow is in accordance with the policy recommendations of the Agricultural Capability Study carried out by the Department of Agriculture, namely to

- (i) encourage the retention of productive and potentially productive agricultural lands in efficient agricultural units;
- (ii) allow for the development of areas for small rural holdings and
- (iii) provide for the on-going utilisation of agricultural land in the Lithgow City area.

Of particular importance is the use of a minimum subdivision area of 200 ha (as recommended by the Department of Agriculture and established in neighbouring Oberon Shire) for general rural areas. This provision also acts to restrain competing land uses in resource development areas and maintain environmental quality.

It should be noted, however, that the agriculture strategy with respect to rural residential and smallholdings does not include the Department of Agriculture's recommendation that this development be preferably located on Class 5 land. The reasons for this are that most of the Class 5 land is also of considerable nature conservation/scenic value and/or very steep land unsuitable for development (Class VII and VIII lands in the Soil Conservation Service Capability Assessment) and/or high bushfire risk areas.

11.6 Rural Residential

The strategy for rural residential development (here used as a collective term to include all forms of small acreage hobby farm, rural homesite and rural residential estate)

is to provide a variety of rural living opportunities in pleasant rural locations with good access to local employment centres and the towns of Lithgow, Wallerawang and Portland.

The Steering Committee considered the question of the amount of supply of rural residential opportunities, and took the view that it was more concerned with issues of location, access, services and the environment than it was with the actual upper limit on the number of lots that could be provided.

Accordingly, rural living opportunities will be provided as per all options identified in Section 10 (namely Cox's River Road, Hartley Valley near Brown's Gap, Bowenfels/Farmers Creek, Rydal, Mount Lambie, Sunny Corner, villages of Cullen Bullen, Capertee and Rydal and rural homesites) giving a wide variety of type and location of rural residential opportunity. At the same time, normal development controls related to staged releases dependent on take-up rates would ensure that over-supply situations were avoided.

11.7 An Approach to Rural Zonings

This final section of the Environmental Study is included to illustrate an approach to rural zonings that can be used to give an indication of a statutory planning framework for the rural areas of the City of Greater Lithgow. The suggested zonings have been determined on the basis of realistic application, effect on the economic base of the area, protection of environmental quality, and provision of rural living opportunities.

Specialised rural zonings will be restricted to arterial road frontages, rural residential, environmental protection (scenic/historic site and nature conservation) and national parks/nature reserves. The balance of rural lands would be designated as General Rural with a minimum subdivision area of 200 hectares.

Special zonings will not be used for resource development projects (coal mining, cement manufacture and related industrial activity) or forestry. Procedures for resource development projects as designated development are established under the EPA Act and Regulations, while issues of land use in State Forests are best dealt with in a management Plan framework where the forestry, mining, conservation and recreation interests can be assessed in a co-ordinated manner.

Rural lands fronting the Great Western Highway, Jenolan Caves Road and the Sodwalls/Rydal Road (the major tourist routes) would be designated Rural 1(b1) (Arterial Road Frontage) with the zone extending 800 metres on both sides of the road reservation. All other lands with an arterial road frontage would be identified as a Rural 1 (b2) zone extending 400 metres both sides of the road reservation.

Areas for rural residential development would be designated Rural 1(c) with various sub-classifications depending on the type of rural residential development. It may however be more appropriate to identify those lands in the Farmers Creek - Marrangaroo area as a low density residential zone.

Environmental protection zones would be used for scenic, historic site and nature conservation purposes. The designation of Wildlife Refuges on private property would be at the request of the owner.

Environmental protection 7(d) (Scenic) zones would be applied to the Capertee, Wolgan and Hartley Valleys, while the Hartley Historic Site could be designated Environmental Protection 7 (k) (Historic Site).

A number of areas have been identified by the National Parks and Wildlife Service as being of significant nature conservation value, these include the following:

- (i) areas on the upper and lower Turon. While the majority of these lands are either Crown lease or freehold, the Capability Assessment is Class 5 (Agriculture) and Category VII and VIII (Soil Conservation Service).
- (ii) an area adjoining the northern end of the Winburndale Nature Reserve - mostly Class 5 and Category VII/VIII land.
- (iii) the Airly-Capertee area - mostly Class 5 and Category VII/VIII land with the majority as vacant Crown land and Crown lease.
- (iv) Portions 163 and 102 Parish Clywdd County Cox currently used for sand mining but with high conservation value for full catchment protection of Wollangambe River.
- (v) Dargans Creek and Brown Swamp - a smaller area containing a number of rare orchids and the restricted Eucalyptus gregsoniana.
- (vi) Mt. Blaxland. Occurrence of rare Eucalyptus pulverulenta (silver leaved mountain gum).
- (vii) Portion 27 Parish Lowther. Another occurrence of Eucalyptus pulverulenta plus large area of significantly unmodified natural vegetation.

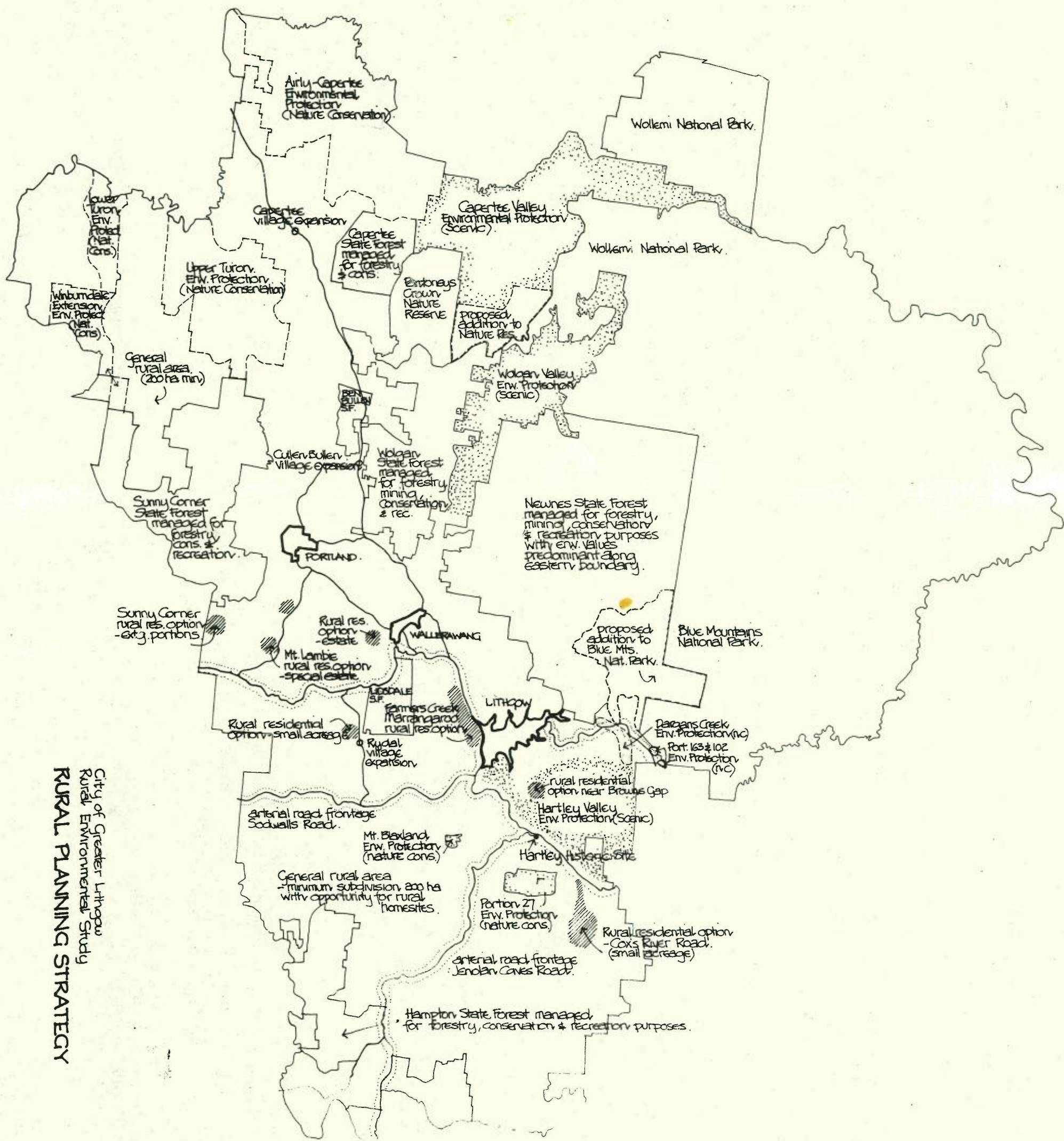
To emphasise the nature conservation values of these areas, designation as Environmental protection 7(n) (Nature Conservation) is appropriate.

The existing Blue Mountains National Park, Wollemi National Park and Pantoneys Crown Nature Reserve and Winburndale Nature Reserve (part only) would be zoned National Parks and Nature Reserves 8. The NPWS has also proposed additions to the Blue Mountains National Park, to protect (as far as possible) the full catchment of the Wollangambe River and rationalise internal "island" tenures. The Service has also proposed additions to Pantoney's Crown Nature Reserve on vacant Crown land adjoining the eastern boundary of the reserve. These areas should similarly be zoned National Parks and Nature Reserves 8.

In summary, the list of zones for rural lands within Greater Lithgow would be Rural Zone Nos. 1(a), 1(b1), 1(b2) and 1(c) - various classifications; Environmental Protection Zone Nos 7(d) (Scenic), 7(h) (Historic Site), 7 (lc) (Wildlife Refuge) - if required and 7(n) (Nature Conservation); and National Parks and Nature Reserve Zone 8. Layered over this would be any Interim or Permanent Conservation Orders issued by the Heritage Council of NSW or any aboriginal relic defined under the National Parks and Wildlife Act.

Austration Aggregates (for 163)

Potential sand ~~reserve~~ site



City of Greater Lithgow
 Rural Environmental Study
RURAL PLANNING STRATEGY

LATONA MASTERMAN & ASSOCIATES

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